

Audubon &  
Shelby cos.  
Dec. 12, 1912  
Aug 13 - Sept. 7, 1913.

~~From Iowa Official Register - 1909-10.~~

~~Harlan 1200  
Kirkman 1232  
Iowa 1266  
Boston  
Defiance 1275  
Fairfax 1309  
Panama 1251  
Portsmouth 1200  
Shelby 1304  
Tennant  
Elkhorn  
Corley~~

~~Dunlap 1097  
Perma 1167~~

~~Brown in Robt 114~~

This book is of no use to you, but I want it. If you find it I will be glad to give a reasonable reward if you will return it to me.

B. Shimek  
Iowa City  
Iowa.

14 I

Audubon and Streeter

1912

Jan 12, 1912

Left Des Moines at 4:30 AM

Arrived about 6:30 AM

and I arrived early

at Audubon at 7:30 AM

met Mr. LaRue on the road

old long way.

Low RR and just made

shot at 7:45 AM

again

just before road 112, which

is a good place to stop

and get a meal

at mile for 8:30 AM

to see a book.

Grayson had gone out to

house, has no place yet but

house at 8:45 AM

I asked Grayson to come

youngest child to go to

the correction and he went

back to Mayow & Powers.

Went to hotel for dinner and then met Rev R. Smith, the Baptist State Seaman, for Rural Churchman.

He introduces me to the Co., Nuf't., Miss

Mr. Cousins, a cousin of Bob & a native of Cedar Co.,<sup>3</sup> to Mr. Van — a banker; Mr. — son, the latter in general merchandise, former a banker; Dr. May, an S.U.T. grad.; doctor S.S. of park; druggist —.

Mr. Smith was both ordained and married here.

Before dinner I called on

Mr. Wm. J. Laubender, city clerk, who promised to get well-records.

In the afternoon I looked up

for Harry Newman in charge of well-drill, and Mr. H. Locke, his assistant. They represent the J. P. Miller Artesian Well Co. Chicago.

Obtained from them a well record:

Soil at top -

at 33 ft. — 4 or 5 ft. of sand,  
at 500 ft., 2 ft. of dark material  
like shale.

Below 500 ft., to 1140, — shale  
from 1140-2000, — limestone  
streaked with belts of shale  
2-5 ft. wide.

The limestone is gray and white mottled.

Water mostly at 1425 ft.

Then 50 ft. of green shale.

Then 55 ft. of gray sandstone  
which they called St. Peter S.S.  
Took samples of last at 10-15 ft. and  
25-30 ft.

1913

Aug. 13, 1913 - Wed.  
Left Sioux City at 5:30 AM  
Rained some down at Hamlin  
and waited until 2:30 PM  
for a freight train. This  
train came & cleaned up  
most of the rain. To wait the  
3:40 PM train on the C.R. R.  
for Hamlin, and had  
to wait until about 7<sup>30</sup>  
PM for a delayed C.R. W.  
train.

Saw Mr. Rogers at Hamlin.  
Reached Hamlin after 10  
PM, & put up at the  
Hotel Hamlin.  
Very hot, and quiet!!

The well is located on  
the flat opposite the  
C.R. & P. depot.

There is a brickyard on flat  
near depot, - used to lie on  
bluffs on opposite side.

Mr. O.H. Jacobson, representative  
of Mr. Audubon Co., owns  
a brickyard near Kimballton

Mr. Newman & his crew drilled  
the Dunlap well, = 1550 ft.

Left at 4:30 PM. for Hamlin.  
Met Dr. Machinist of Des  
Moines on train. He was  
formerly in Audubon.

Aug. 14, 1913 Thurs.

Spent day in collecting up information about well diggers, working up plate, etc.

Found that Will Shepherd was out of town but saw Ed. White.

Aug. 15, 1913 - Friday

Spent the day in work on township plate and in planning itinerary.

Aug. 16, 1913 Sat.

Drove westward on road all day. Ed. White to the quarry at cut in, sec. 8. (20.4) - 79-36.

Found a thick layer of bluish gray rock with many nodules, more or less layers, and numerous iron tubules.

Where dry it is quite hard. A few pieces were scattered all through. Found

*Indomia* area

Followed up the river and found a steady bank with an exposure showing what appears to be the following succession: This is cut 2.

Loveland

Kansan

Aftonian

Nebraskan → a.

Much water comes from a.

Also found <sup>modern</sup> *Succowia* *arvensis*  
*Zonitoides minusculus* and *Bifidaria*  
*arumbae* under leaves.

In the afternoon I walked west  
along C. Gr. W. R.R. Southwest.

Noticed old cuts (<sup>no.</sup> 3 & 4) at  
depot, showing trees. Now  
badly overgrown.

Cut 5 is first cut W. (SW) of  
C.R.I&P. depot, on C. Gr. W. R.R.

In the E. side of this cut,  
toward S. end, is where a  
mastodon (I think *Elephas*) tusk  
and tooth were found.

Said to have been at base  
of trees.

The cuts 3, 4 and 5 are  
here greatly overgrown with  
*Melilotus alba*, a good holder!

At cut 5 it does not grow  
far from drift, and still  
somewhat cement woods. Very wet  
sand brought from the Platte.  
Walker 3. 25.8. To sec. 20. H.P.S.

Visited the woods just on  
forests place - & found  
broomes and red elm dominant,  
the former more common on upper  
borders. This was formerly well  
of hazel brush, etc., and now little  
grass has possession, and this place  
makes good pasture.

The grove in sec. 20 are  
partly cleared,

In the grove were: *Ribes gracile*  
*Ulmus fulva* *Cornus paniculata*  
*Quercus macrocarpa* *Ulmis v. gracilis*  
*Symplocos occidentalis* *Ulmis v. gracilis*  
*Xanthoxylum americanum* *Crataegus mollis*  
*Triosteum perfoliatum* *Rhus glabra* <sup>borders</sup>  
*Prunus americana*

*Calocarpa* (a few) - planted  
box Elder - introduced?

In the E. 40 the red elm is dominant.

This grows on a steep  
N. slope.

High ground  
etc.

On the bottomlands along the Kishen  
near bridge I notice:

|            |              |
|------------|--------------|
| Soff Maple | Red elm      |
| Box Elder  | Vitis -      |
| Alum amur  | Black Walnut |
| Green ash  | Prunus amur  |
| Elderberry |              |

Saw fine planted larches in  
S. part of Harlan S. of C. Gr.  
W. RR.

The mastodon<sup>?</sup> tusk was found  
just about opposite 1<sup>st</sup> Telegraph  
pole N. of S. end of E. side of cut 5

Aug. 17, 1913 Sun.  
move towards a point where

cut 5 is cut

at W. N. 1/4 of cut 5-79-36, a very

road is a cut in cut 5-  
<sup>cut 6</sup> This exposure faces S. and is 3-

1 ft deep, road cuts back 3

ft. and slopes 10° west.

The lower part (greenish)  
gray rock iron tubules were  
abundant & same no fossils.

The upper part (greenish)  
shows a yellow loess, more  
heavy, with wind streaks.  
No nodules or fossils.

Took sample of gray rock from  
near base of slope, saw off.  
yellow loess 1/2 way up, and  
rock case about 7 ft. above  
top of base.

cut 7 On N. slope, at corner, another  
similar section shows gray loess

- at base, yellow above.
- X. Three smaller cuts in yellow loess appear along road north. This part, to base middle of sec. 8 is rough. Farther north the slopes towards river become less abrupt and the road runs along flat.
- Near Harlan we passed a big (grayish) patch of *Amaranthus retroflexus*.
- Vermont is very bad in pasture near bridge.
- Cut 8. In NW. 1/4 SW. 1/4 29-80-38 a cut on slope facing N. (not more than 3-5 ft. deep) shows Kansan drift in lower half, a ferruginous zone, with a sort of chocolate layer above, and on this a gray loess with nodules. (See samples.) The Kansan is of the gray modified type (see sample); the ferruginous is clayey.
- The layer above (a foot or two)

is laminated with darker strata interbedded, and grades up into yellow loess above.

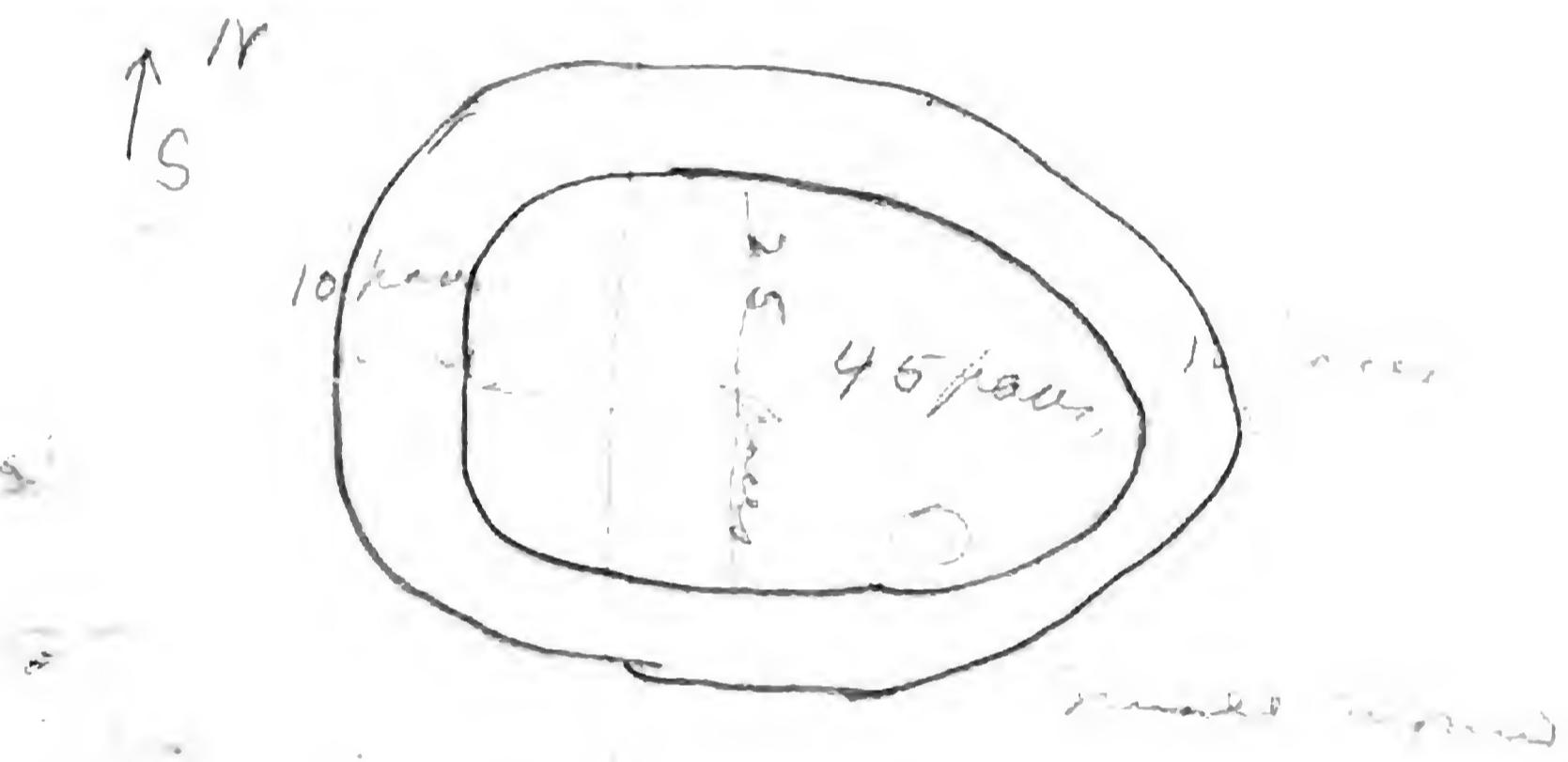
Near top of cut, and on top, is a layer of yellow sand (not thick, probably only 4 or 5 feet) which is full of small nodules, possibly not very abundant.

Cut 9. - In NW. 1/4 of sec. 7 there is a steep hill facing N., with cut. Yellow loess shows on top of hill.

Cut 10. - The steep bank just N. of Pickard's in SW. 1/4 SW. 1/4 sec. 20-80-38, shows calcareous Kansan (light blue) for nearly  $\frac{2}{3}$  of the way up. Above it is an indefinite (lumped) reddish layer, and above that yellow loess. Did not see blue (gray) loess, did not reach top. Looked at the two mounds in

N. part of sec. 17, - near bridge,  
the east mound is larger.

It is very flat on top and  
measured 20'.



It is somewhat lower towards E. side.  
Elevation about 10 ft. at E. end  
and over 12 at west end.

This mound is right as  
flat.

The other mound, west of  
ditch, is narrower at top,  
not flat, and overgrown, - some  
trees.

There is a sort of terrace  
in the big bend of river just S.,

on E. side of river, ridge runs W.,  
just below the 20 ft. terrace lower  
bottom. It is the same as just a  
part of <sup>80-34</sup> ~~near~~ Terrace cut off!

The soil here is a sort of  
irregular terrace.

The soils are all same  
yellow color.

Cut 11 - On S. side of cut off  
in E. end of sec. 7, I could see  
gray loam near base of slope,  
and more yellow loam on top.

Cut 12 - Cut on N. slope also shows  
gray loam below, with iron tubes.

Cut 13 - At center of S. side of sec.  
6-80-38, on hill facing N.,  
yellow loam appears on top, with  
very many small nodules. The  
greater part of the slope, almost  
to base, shows blue loam with  
many iron tubes. Occasional  
signs of a ferratto(?) appear, but

no Kansan is in sight.

Near Sec. line S. of sec. 23-81-39, along road which runs along northern slope, just below top of ridge, gravel and cinders indicate Kansan.

(Copeland at Manilla is well tilled. A little ridge or ec. 63, on James White's farm, is almost barren.

It is yellow or reddish stuff, - Loveland? (See sample)

Examined the big cut E. of White's and saw many farms will return to this section.

X Yellow loess also appears on S. side Sec. 4 - 30-81-38, (See map.)

Monday, Aug. 18, 1913.

Wrote up notes. At 7:15 AM. went to Bluefield from west of Copeland with Elmer and his new car.

Noted the plants largely from that stumps of the pigment were favorite haunts of fungi and mosses. Found a somewhat stump over 3 1/2 ft. in diam. & covered with lichens. (see photo.) Collected a few land shells, and on an old rotten log (partly basswood) I found fungi & slime-molds.

The red soil & loam are more common on the upland border, & the common shrubs, blackberry and basswood are quite common. The pigment is very common & scarce by trees. Returned at noon. Rained and

I could not get out again until nearly 4 PM. Went to Bangs' grove at Magney) and collected plants in the woods, and also in the seedy, boggy places on banks.

Also picked up a few land shells. Was out with Ed White,

Also recorded weeds in a cornfield & along the roadside.

Returned in time for supper, & in evening arranged & pressed a package of plants, & prepared them for shipment.

Went to bed after reading.

Aug. 19, '22. Tues.

A hot, humid morning. Went out pieces of plants & then at 10 AM drove S. E. with Ed White to a small hill just west of town. The hill rises about 100 ft. above the valley floor.

Hd reading at CR & P-1124

Sat it at 12:00

cut 14  
The property is, in Magney W. down a hill of just over 100 ft. The yellow loess  
all around the country is very  
rolling.

cut 15 (See notes of Aug. 24)  
Near Ft. Col. 1, sec. 20 there is  
a long hill, with 5-10 ft. cut this  
shows yellow moderate loess above,  
probably 6-7 ft. (thin.) - then blue loess  
with strongly oxidized band which runs  
under upper limit of blue loess.

The blue loess has many tubules &  
some rounded nodules, but I  
found no fossils. The blue  
loess appears in lower "4 of slope,

runs nearly parallel to slope,  
dipping in above, and is probably  
not over 5 or 6 ft. thick. Though  
this was not determined in many  
of samples.

There was sand (curiously number  
less) about 1/2 way up hill &  
this was about a foot of old  
sand just west.

Near base of slope the  
chocolate, boulders layer abounds,  
about 2 ft. thick, & lower  
it is calcareous light blue  
Kansan. Some bubbles &  
small boulders.

The top of hill = 1334, base = 1250.

cut 16 Next hill E = 1315 - top & cut on slope  
(Aug. 24) Kansan dips, gray bed, yellow loam.  
cut 17 (Aug. 24) same lens with fossils; blue and brown; 6-7 ft. yellow loam.  
cut 18 The next hill, near middle  
of run shows Kansan at base,  
a few feet & I notice  
only yellow loam above.  
Top of hill = 1330.

This is a slope facing N. On the  
left side of road is a series of  
small cuttings, all facing  
E. The valley runs W. &  
wind erodes them (Aug. 24)  
(This is Chas Davis -  
Partickwood)

□ green pebbly S

Another hill has almost no cut  
and then the east face in road,  
cut 19 facing E., shows yellow loam in a  
drift at base, blue much?  
below yellow loam. Gray loam;  
at 4-5 ft. deep. (See sample.)  
A small cut at corner (Aug. 24) shows blue, yellow loam, marked on map.  
Kusters & V. S. show modern school

at N.W. cor. of rec. 15.

cut 20 Dr. W. side of hill. S. of Kusters  
Kansan shows number of lenses  
up the hill (gray & yellow loam on top).  
Took a series of pictures  
at White's. <sup>alpha</sup> Aberdeen Angus  
cattle.

cut 20, <sup>(Aug. 24)</sup> Overgrown cut, shows gray streak in road, yellow loam  
cut base W. " 21. (Aug. 24) Face E. Similar to last.  
" 22. (" 24) Shows blue loam at base, yellow above.

Cut 24.

S. of the 2<sup>nd</sup> rec. comes W. of Stiles' house along road there is a low bank - 2-4 ft - shows gray loess with iron tubes, nodules, and a few fossils.

This is not high, its about 1305 at base.

This blue loess runs along for some distance & lower down the tabular "Chocolate" & rather a red hardpan (ferretto) shows & below it typical light Kansan.

On N. side of rec. 36, (nw 1/4) there is a small hill with Kansan exposed.

Mr. White's Nw. 40 A.  
alfalfa field is 5 yrs. old  
& the one pastured (30 A.)  
is 12 yrs old.

He is pasturing this 30 A., but it grows up well so that young

indigestible stuff - not eaten rapidly, & has turned his herd of Aberdeen Angus cattle. He says it won't give. Has been on 3 weeks & a crop 2 tons to A. has been cut.

The 40 A. tract had been cut twice, 5 tons to A. & the 3<sup>rd</sup> was beginning to blossom.

Cut 25- Just S. of school come on N. line of D 36 the hill shows Kansan away up. There is very little loess. The bluffs along this part are rather steep & high on E. side & snow grows well up in holes along N. side of rec. 36, at about middle, Kansan shows at base of bluff - silvery - with boulders - grows in bare ground & on road at foot of hill, marked on plot.

Cut 26- On slope up from Bartlett cr.  
<sup>face "</sup> (S) Kansan slopes well up. Yellow loess on top.

Cut 27

To exposure of section line (true undist.)  
shows blue loess almost to top, on  
small slope facing S. - 3-6 ft.  
& iron band 1-2" or more,  
& then alluvium. Then

Cut 28

A small hill just south...  
very similar.

Cut 29 The next hill is higher 13<sup>30</sup>  
- & its slope shows gray loess with  
some yellow above.

On return CR & P deposit

= 255

(Cut 40)  
On N. side, NW. 27-78-38 - a and shows yellow  
loess. Face E. (See notes 78/24 - May 24)

Kansan shows along road on N.  
side NW. sec. 8-78-38 - on both  
sides of the deep gully.

Top of hill on N. side NW 4<sup>8</sup>-78-38  
= 13<sup>35</sup>; river bottoms N. of

Cut 30 low ridge N. of SW corner 5-78-38.

Cut on slope facing E. near NE. cor. of  
NW 1/4 NW 1/4-8-78-38 shows yellow  
loess at top.

Aug. 20 - 1913 - Wed.  
Rained in morning. Packed  
bagful of material, - threw up  
notes and plates, and expected  
to leave for Council Bluffs  
at 6:30 P.M. but a wheel  
in the C. on W. at Kellerman  
blocked me. Expected to  
go to Council Bluff, telegraphed,  
but event that was not possible  
as there was no definite  
assurance given that I  
could get down.

went to College heights at 5 P.M.  
From Heights 40 go higher  
& than front of hill.

252

Aug. 20 - 1913

CR. 1000

with attention

Aug. 21, 1913 Thun

Left Harlan at 6:45 am.  
by automobile (\$3.00) for  
Portsmouth. All the region  
between is rolling Kansas  
(medium) with trees  
everywhere visible. (See location  
of larger cuts.)

Arrived at Cow Rapids  
at 10 am.

There is a very distinct  
west east joint. The  
east part shows a  
horizontal layer - & fine  
smoke & layers of sand -  
at one point - 10 feet up  
from the - 50 ft. at  
the - 100 ft. mark.

Estimate the sand layer is  
about  $2\frac{1}{2}$  ft thick - on top  
of smoke below along 2 ft  
sand has nicely laminated

Aug. 21, 1913 Thun

There is a strong tabular bed of sand  
below laminated sand  
at 90 ft thick (horizontal) and  
then a coarse and broken  
yellow sand - & a little  
blue sand above it.

(See next page)

For west joint  
just

10 ft.

10 ft.

other way 4-4 way too - shows



At the camp we saw  
more fresh fish, and  
much more primarily pink  
quantities, but the two together  
made a good day.

The count was  
about 17 July & up  
to a count of 30 on 27 &  
then the series continues.  
2<sup>nd</sup> cut Between 17 & 23 the end

Between 17 & 23 the end

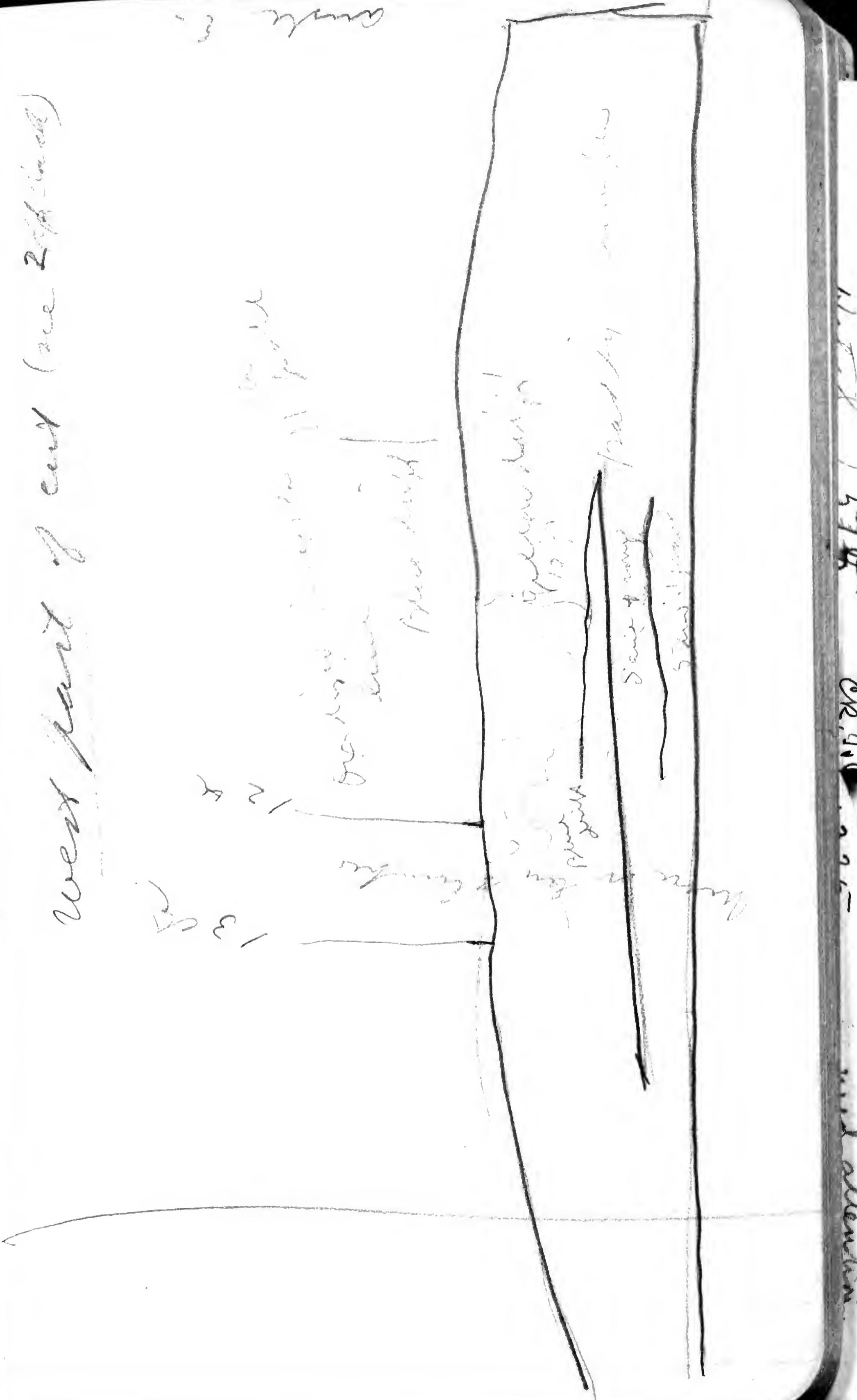
is low - 6-7 ft., -

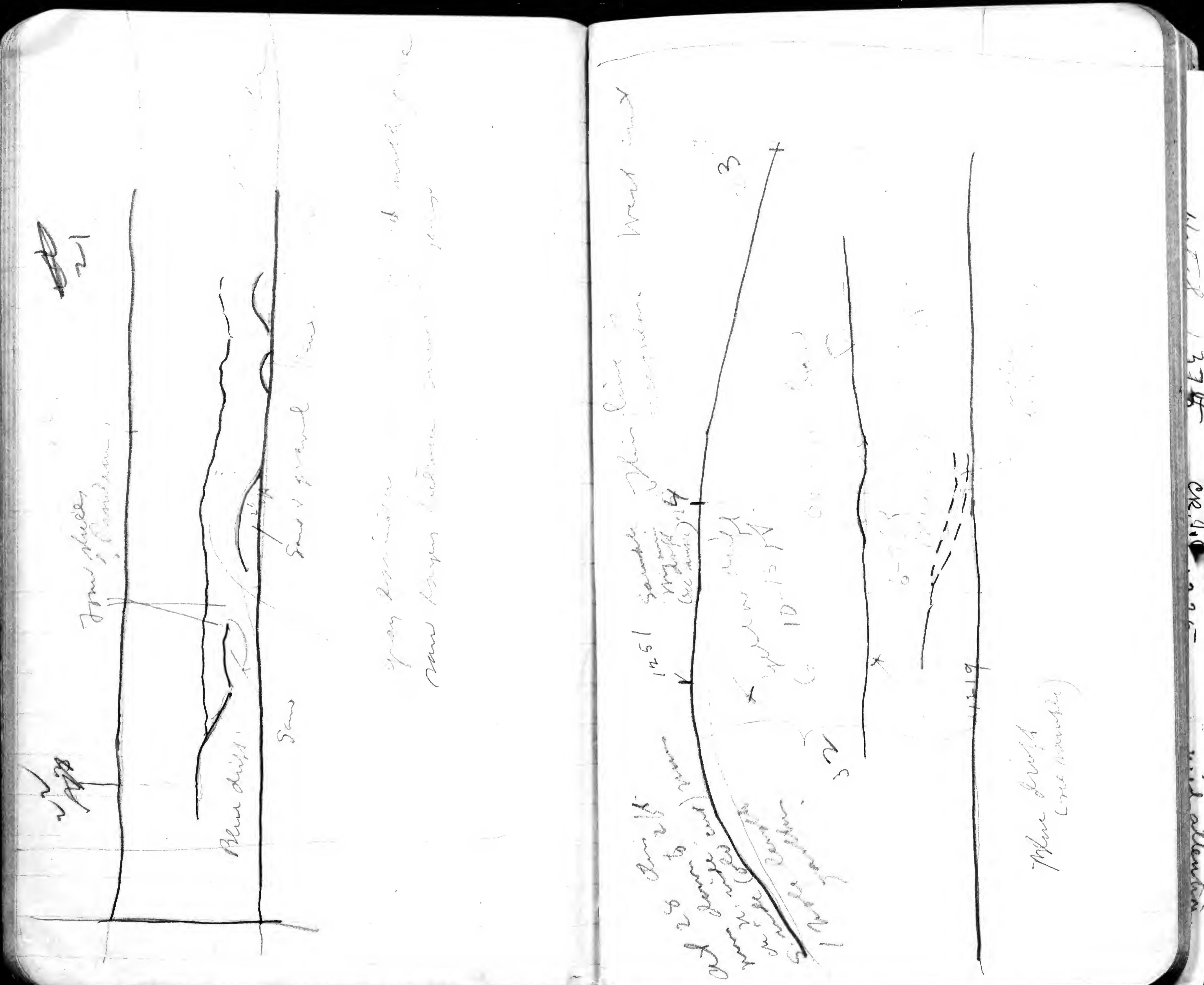
Belvoir 22, 23 - 24

~~affectionate~~

(See second page enclosed.)

On 2nd Oct 1912  
I went to see  
the new  
factory  
at  
Canton  
and  
also  
the  
new  
station  
at  
Shantou.





11-28-1974 on a line of attention

West P. 13745 Cr. 1.0.00

Cr. 1.0.00

With attention

On the afternoon of June 21 river  
bottom sand and gravel along  
Huron River about 1 mile  
upstream from bridge.  
River bank 10' to 15' above  
water, fine gravel top 3' or  
so more. Gravel covered by a  
second terrace. Shows a very thin  
layer of loess on the sand,  
gravel & on the side of the hill -  
The sand has local character  
(Mud) Coarse material  
mostly at top (soil) -  
almost no silt except a thin  
on the hill - and what  
appears to be a glacial drift  
in them small hills. Sandy soil  
of various sizes, some being  
of the sand.

Top of sand 12.03

Bottom of pit 12.13

River below dam 11.90

The lower bottom land  
5 to 10 ft. above  
the Cook river,  
the cuts westward along C. M. & P. R.  
were then taken up and numbered  
consecutively as follows:

The cut in the cor. of a rd.  
is about 15 ft. deep & is all  
sand, with an iron cap of  
small sand & silt stone.  
This part about 2 mds. long  
1-3 ft. deep.

This is cut 2.

The first cut from road.  
It shows yellow coarse sand  
gravel, & this on a sand cap.  
The next cut shows larger &  
coarser stuff on S side;  
about 2 ft., a yellow  
stuff (lignite); over 5 or 6  
ft. of yellow loam with  
blackish streaks.  
This has many fossils  
& also nodules. It is  
cut 3 of tomorrow's notes.

Cuts 4, 5, 6, 7, 8, 9  
are drift.

Walked back to wagon road  
to Weaver's house. Noticed  
on the way that even forms only  
a little cap, and that drift  
shows on all the ridges far  
up the slope.

Had supper at Weaver's and  
then returned to the hotel,  
from Prof. Macbride and  
conversed with him, mostly  
on drift.

Wednesday

Aug. 13, 1874

with attention

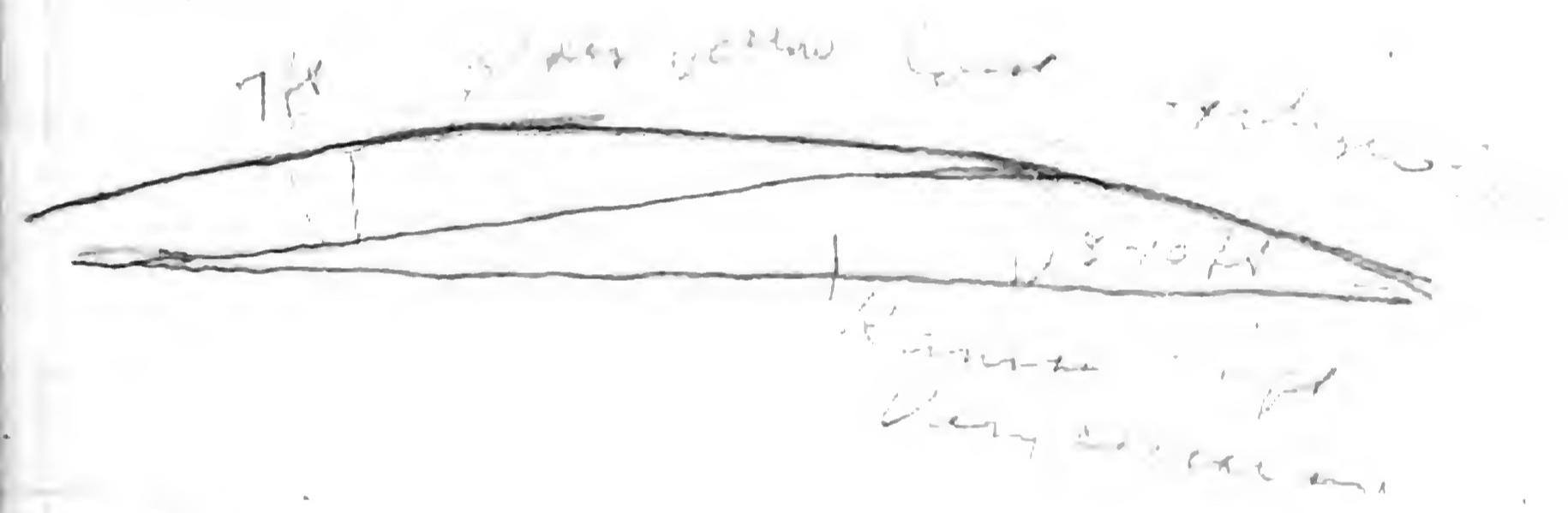
Aug. 22, 1913 - In  
C. Com Rds.  
S. of C. & N. in  
Nebraska.

Elevation of road = 1115  
Com. elevations = 1115

First cut out in the  
sandy soil.

The 2<sup>nd</sup> cut away

S. side



The N. side is similar, but  
thickness = 15 ft. and  
oxidized ferruginous  
soil four or five feet.  
The ferruginous soil borders  
the sand no stones here.

At 3<sup>rd</sup> cut. AB = 1128  
and top of E. section =  
1148. On return 1120  
and 1141, respectively.

Cross section of cut B. Top of Com. Rds.

S. side.

The sand, moves on the bottom of  
the valley.

Ground floor 25 ft. thick  
Brownish yellow sand  
with some fine pebbles  
and some small stones.

Then sand begins 10 ft. S. of road. C. elev. 28. Then rock & gravel  
N. of road. It is gravel, a sand, & a sandstone  
two parts. The first is very soft  
sand, and contains the brown iron pyrite, which is  
poor.

Second part is hard  
sand, and contains the brown iron pyrite, which is  
poor.

1148 on A. & 1120 on C. elev.

The front in the S.  
side seems to be  
relatively to the top  
or belt beginning 25  
yds W. of section line  
& running for 35 yds.  
Both W. & E. of this there  
seems to be no joint.

The frontif. belt  
on N. side is higher  
(about 18 ft), narrower  
(opp. W. end) & the  
whole album in the  
lower part of the  
slope has been  
better inhabited by snails.  
The slope of ridge  
is too small.

At 9 o'clock - reading on  
N. side at the  
frontif. part at  
base of frontif. to 1117

Top of land 1126.  
With sample of upper  
brown sand on ridge  
loose, soft, no joints.  
The slope is heavy yellow,  
with thick vegetation &  
mossing & some round  
stones (the same samples  
yester day). It is  
very jointed in the  
 $\frac{1}{2}$  & grades down to heavier  
more rounded stuff of  
same kind, yellowish  
in chondritic layer & ferruginous.  
The N. side of the foot is  
less clear, fissile & overgrown  
& over-washed.  
The N. side does not show  
so distinct a division into  
2 parts, the rag running  
out.

Mr. and Mrs. G. C. Miller  
Canton

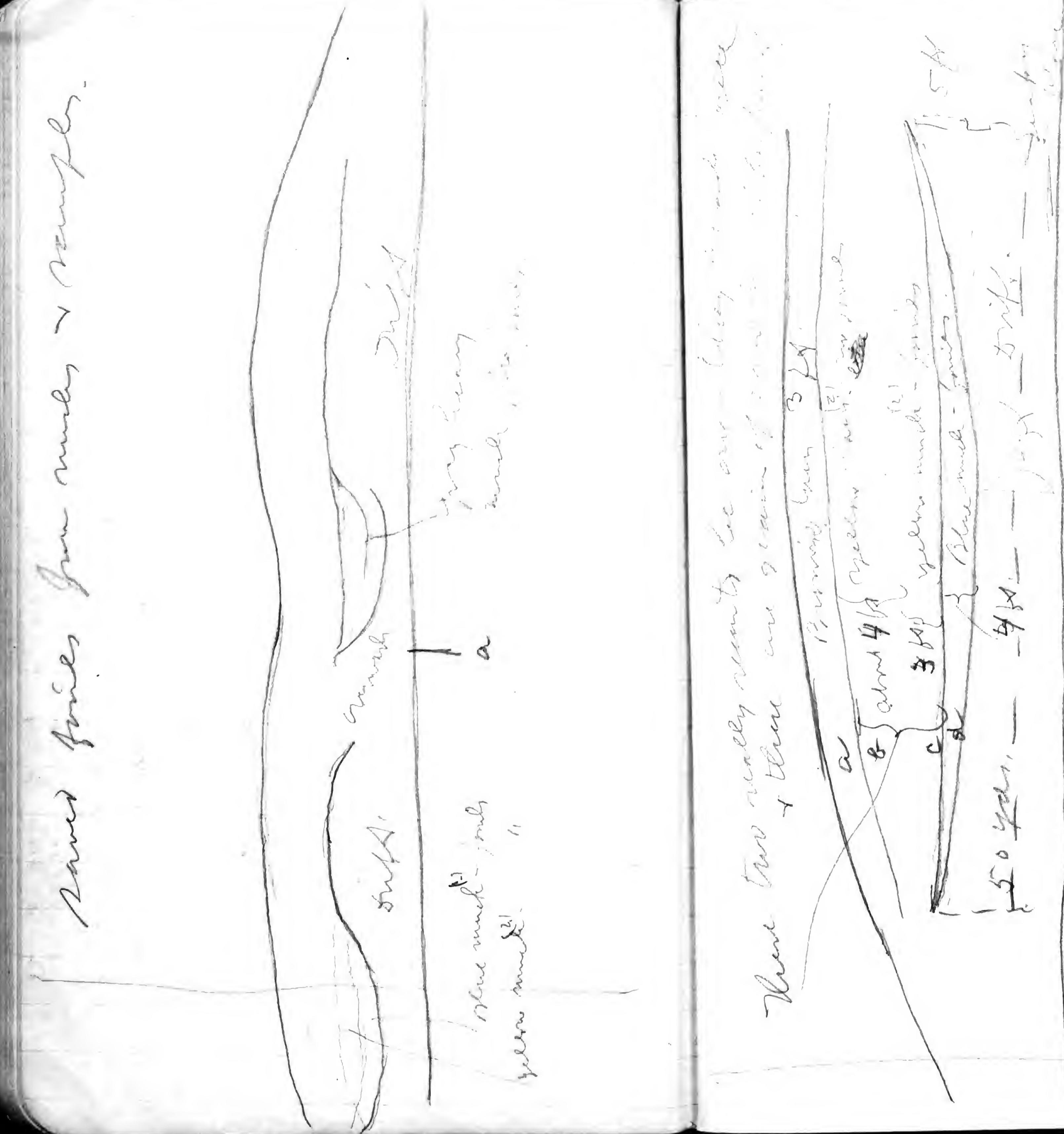


Broadleaf greenish brown  
with thin hair  
Branches few

Part V of the *Journal of the American Revolution* (Volume 1) was published in 1902.



Named species from numbers & samples.



The dip of section 1 blue streak (wavy) - 10° N. dipping  
5 ft. thin sand bed  
Is weathering a given or - in number and base  
a surface ridged by little gullies - low & open, **C-**  
low & rocky more or less blackish brownish slopes,  
at a fine gray sandstone.

11 Sept 1974 C.R.A.D. - 1000' - 1000'

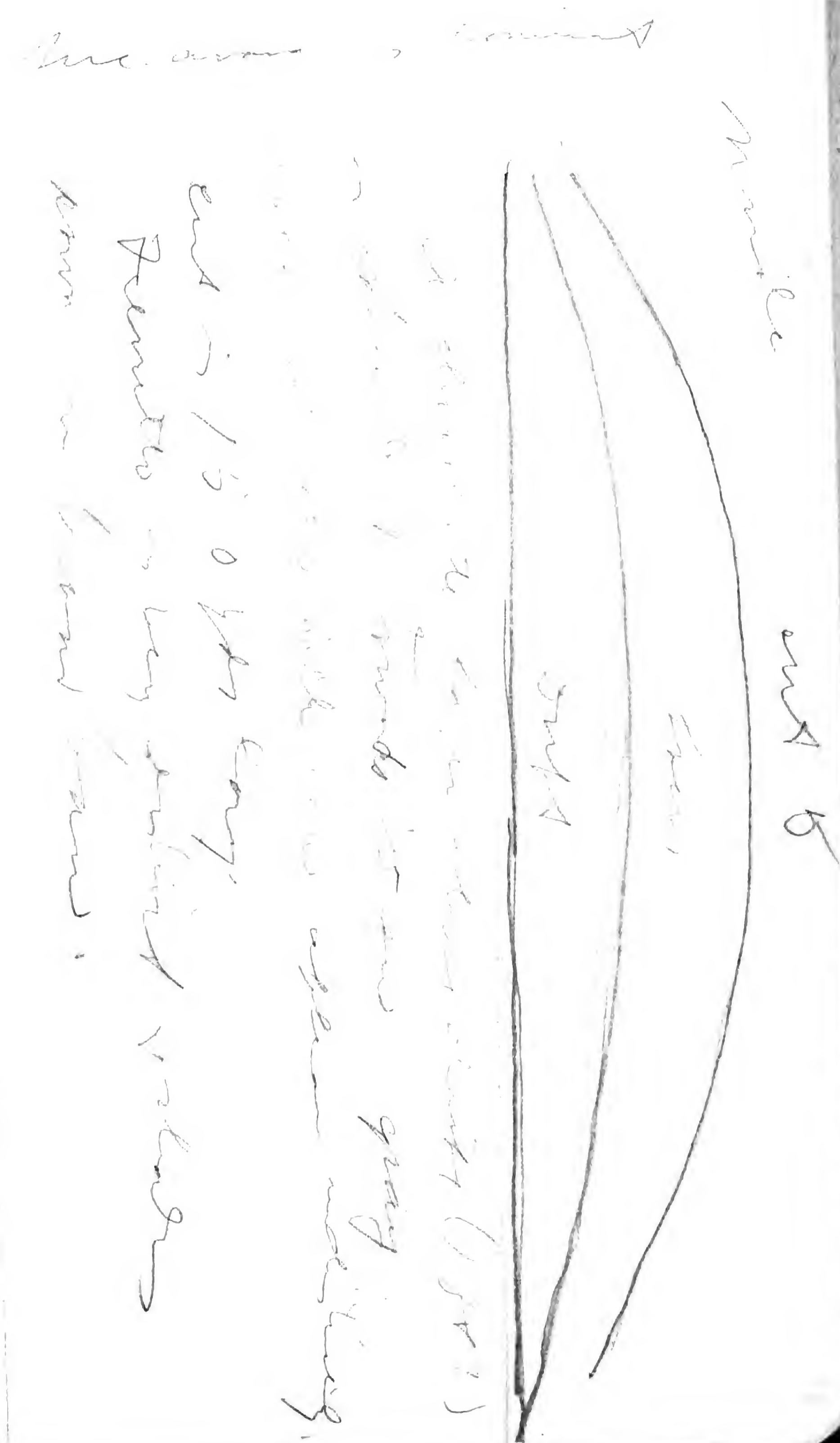
The blue & yellow "sand"  
are not sharply defined  
excepting place below.  
This was evidently a  
bog in a sandy bottom  
dipping S.

Left cut 3 at 11<sup>15</sup> AM  
Barometer = 1100

Cut 4 is mostly cliffy on  
N. side & shows practically  
only drift.

Cut 5 - shows 7 ft. of  
drift & 8 ft. of yellow loam  
(upper 2 ft. brown) - on N.  
side. S. side 3 ft. drift,  
6 ft. brown.

The N. side near center  
shows a lot of fossiliferous  
nodules. This is the  
same heavy yellow  
loam as before (see sketch)



Water 13745 CR. 9.1 m. mid-attention.

Cut 6 begins on N. side,  
line A is 150 yds long.  
It is about 15 ft deep  
& shows drift stages &  
traces of a layer of loam, 1-2  
ft. thick, lying eastward

Windo cut 6



Cut 7 is clayey on N.  
side.



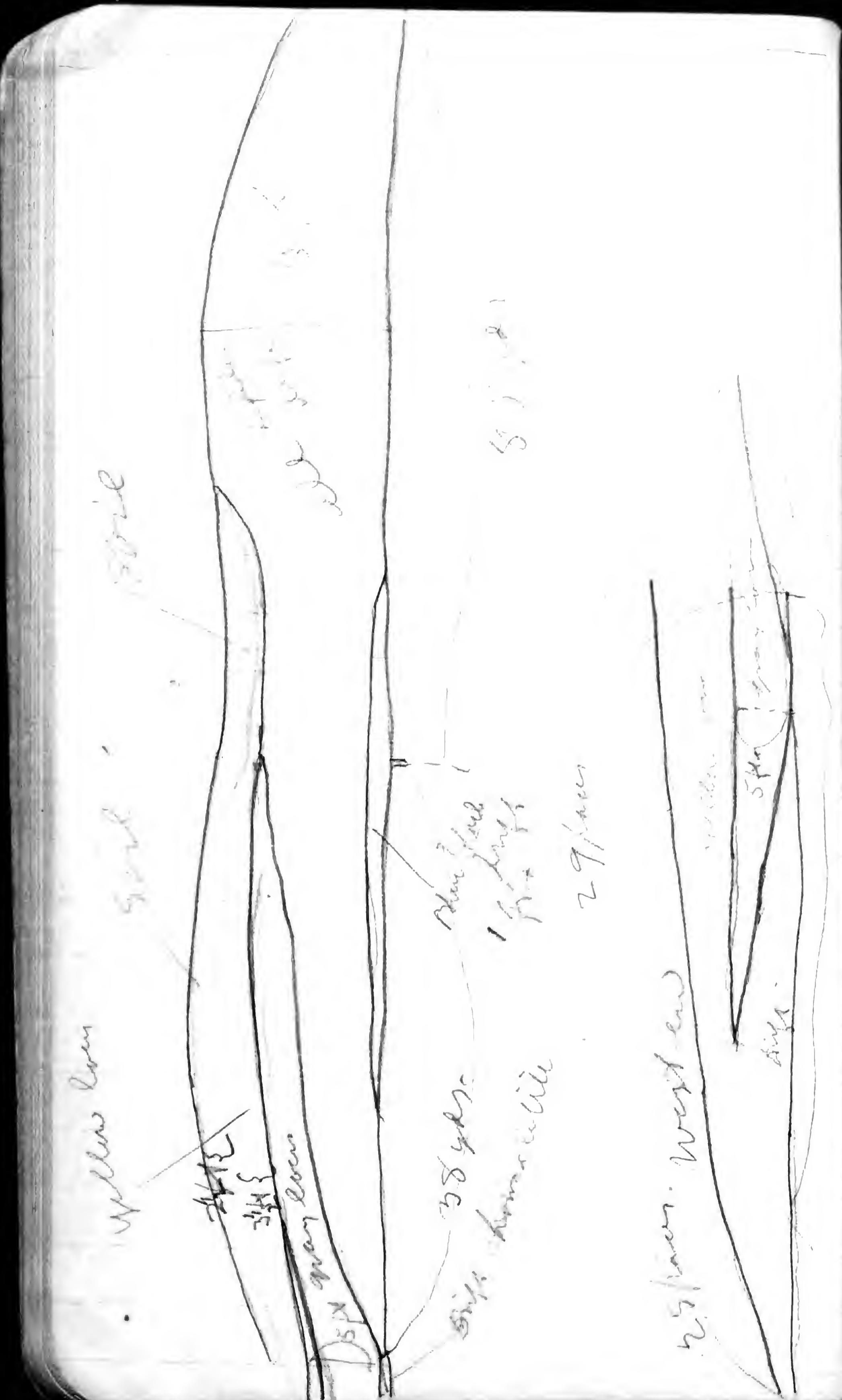
The base is yellow &  
fossils are found in  
that lower part.

Cut 8 is just W. of the road  
in line A 100 ft. on N.  
The drift is composed of  
fine sandy 3 to 6 ft. in thickness  
an irregular mass. The bed  
just below is sand (yellow)  
Some of this seems to be if  
there were no drift on top.  
This may be  
The N. side is lower

West P. 13745

CR. 9.0 - 200

with attention.



well exposed in the valley  
a few miles down the river,  
Vicksburg, Mississippi. This  
is a good locality.  
It contains ~~the~~ nodules & a  
good many tubes. Zones  
are scattered throughout. They  
are more abundant in some.

The yellow layer is separated  
by a sharp line of transition  
to an oxidized band 6-8 in  
wide in lower part of yellow layer.  
It is yellow, with dark spots,  
loose; no zones or nodules.

The gray layer is very finely  
wood-laminated.

(See forms & samples.)

Nov 1 1915

C.R. 100

and attention.

West P. 13745 CR. 1.0

cut 10 is 10' thick & cut  
11 is 10' thick &  
12 is 6' thick.

Cut 10 is 10' thick & cut  
11 is 10' thick &  
12 is 6' thick.  
Cut 13 is 10' thick &  
14 is 10' thick.

It is interesting to note how  
the same thickness of soil.

Cut 12 is about 8' thick  
& is almost all on N. side  
The lower part is a heavy  
yellow clay with few  
pebbles. Railroad  
show calcium sulphur  
in small kidney fashion  
which usually becomes  
The lime above is apparently  
horizontal & somewhat  
laminated, then comes  
soil which is quite

Cut 9 is just you see  
new till coming

say from 1 to 2 ft

for yellow layer.

12 ft

about 10 ft.

yellow.

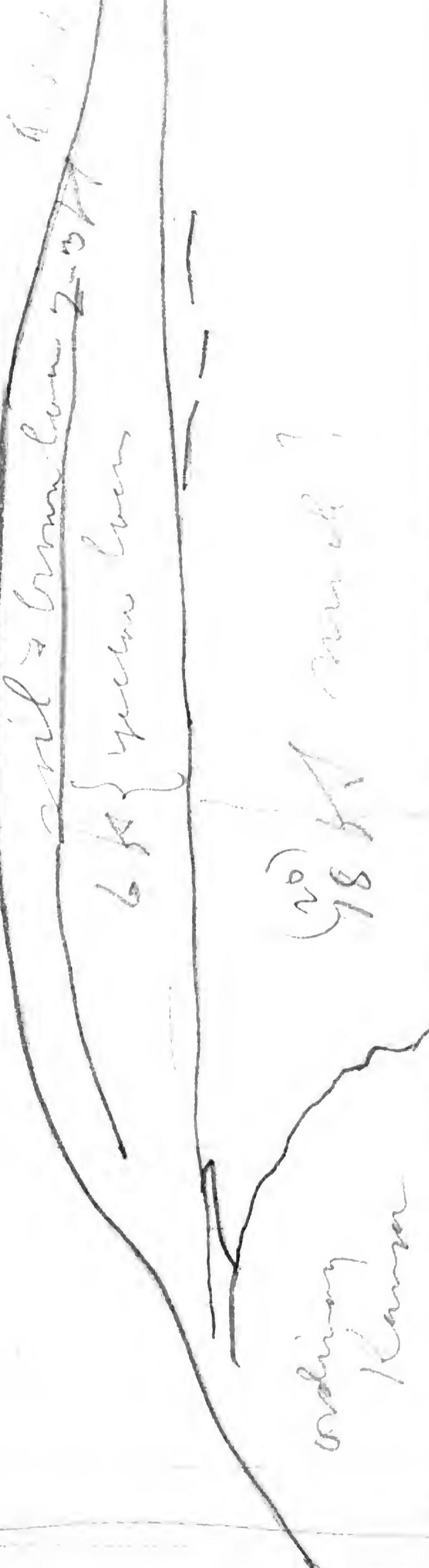
This cut is about 20' or more  
The yellow layer is about 10' &  
the yellow layer is about 10' &

contains many pebbles & shells  
which are sharp.  
This is cut on E. side of Co. side cut is  
lower, but shows drifts, yellow, brown, & etc.

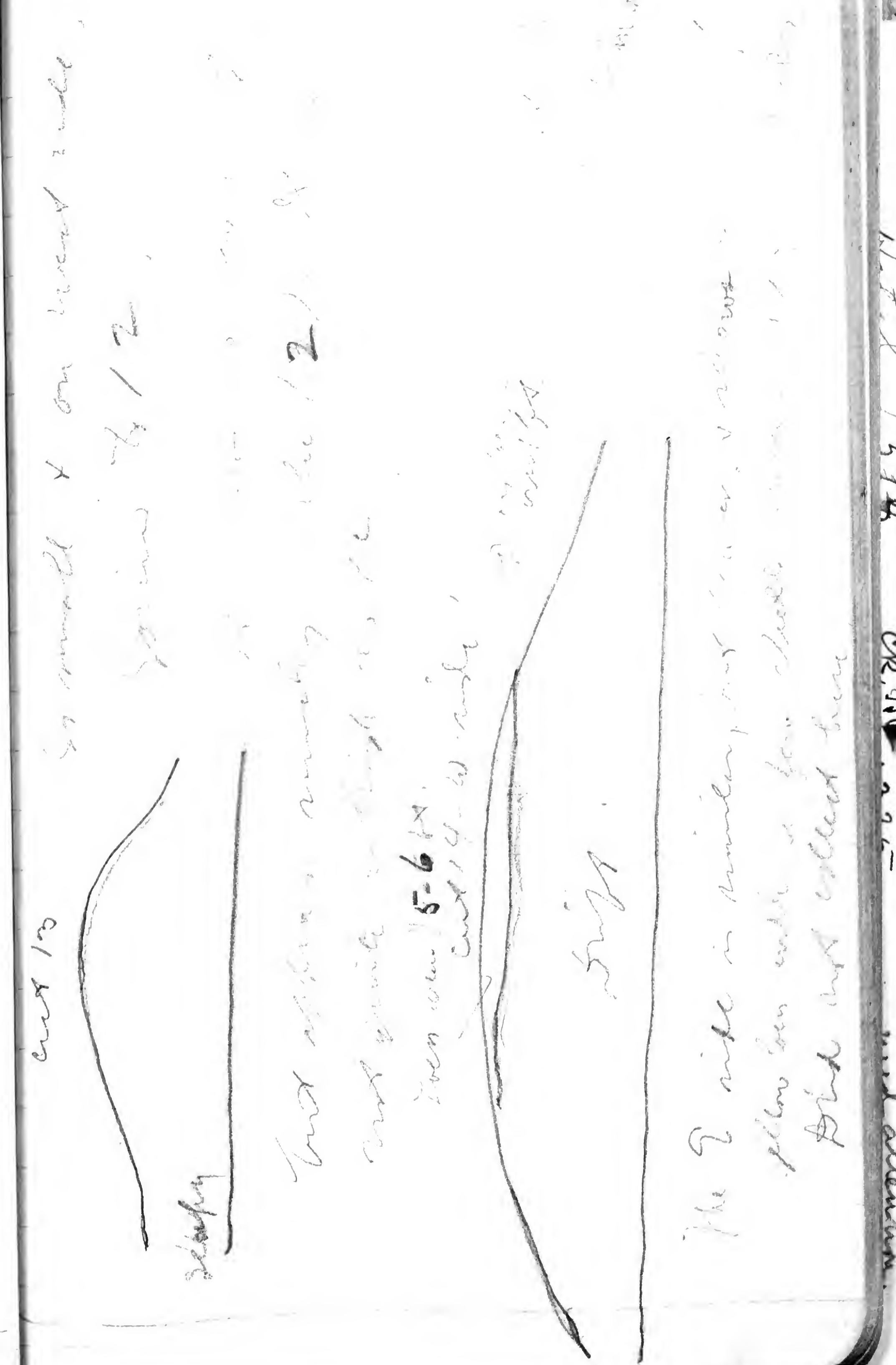
and a pocket of sand.

cut 12 - W. side

gray below, with  
iron streaks



Fossils are scattered & not  
many.



cut 13 - so small & on bedrock

yellow loam

black

bedrock - underlying the 12 ft. of

red sand & light red

iron over 15-6 ft.  
and 4 ft. under  
the 12 ft. of

black

soil

size

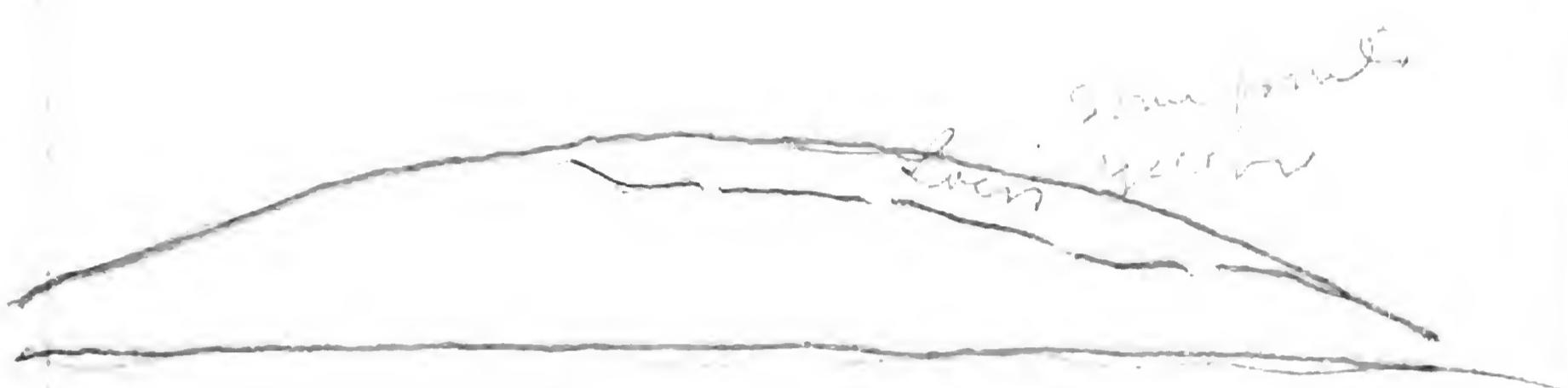
The 2 nite in morning, and iron over 15-6 ft.  
yellow loam within 4 ft. above  
bedrock - 12 ft. of

bird nest collected here

WAT 3,745 CR. 1.0

Cut 15 is surfacing,  
just making in it.

Cut 14 - E. side



On both sides of 14 notably -  
are almost naked (small).

The layer of gray does  
on W side is irregular,  
but over a foot thick  
in timber place. It  
has many iron boulders.

Total of cut 14-W side 1267  
Brace - 1239  
Dorcha few bones from  
cut 14, W. side 28

There are two small iron valves  
in hill above cut 14.

Cut 15 - on hill & S.  
finishes black & hard  
the iron is very strong  
drift is low  
rocks are scattered along  
here.

Cut 16 is on E. side Valley  
& shows only drift -  
Cut 17 is also only in  
drift - E. & W.

Then comes very fine & wagon  
ware.

Quite a bit of iron and  
some timber to cut & etc.

11/21/87 12:37 AM

CR. 100

mid afternoon.

W.E.S. / 3.7.45

C.R. 100-200

mid attention.

Cut 18 is W. road,  
about 25 ft. deep &  
(erosions). Depth of  
is: 12-18 and

6-7 ft. heavy yellow  
gravel on a little  
moderately soft sand.

This is chiefly on S. side (W. side)

Cut 19 is a great cut in  
<sup>RR</sup> old line. It is nearly  
all overgrown, but shows  
that most of it is dry.  
There is only a thin bank of  
soil on S. side. This will be shown.

Cut 20 is new cut just after  
RR again leaves old line.

Cut 18 is W. road

25 ft. deep &  
(erosions).

Depth of is: 12-18

ft. heavy yellow  
gravel on a little  
moderately soft sand.

12-18 and  
6-7 ft. heavy yellow  
gravel on a little  
moderately soft sand.

~~Aug 29~~

At turn, on N. side of

32-8137. Base is sand,  
on N.W. side of road, where  
show 8 yds. of yellow loam.

It is rather sandy, but of  
the older light brownish  
strata & yellow, & has  
some natural weathering seen  
(see samples) & there are  
scattered through yellow clay  
in loam & V. scattered  
& sand.

Reading at base of slope 1345

At base of long slope west ) 1265  
on bottom ) 80

This shows drift distinctly  
at base.

The Kansan is light blue  
& yellow & has rather  
rounded borders  
& pebbles, some green & some  
black.

C. NW. at down 1249

(Aug 29)

C. E. of W. = 1256

C. SW. W. = about same - 1249

Read of Kansan drift

below on Aug 29 - 1249

W.E. 13745 CR. 1.0

mid afternoon

~~cut 20 ~ 8' wide yellow loamy  
soil 1-2 ft (color)~~

Drift - talus -  
about 22 ft thick

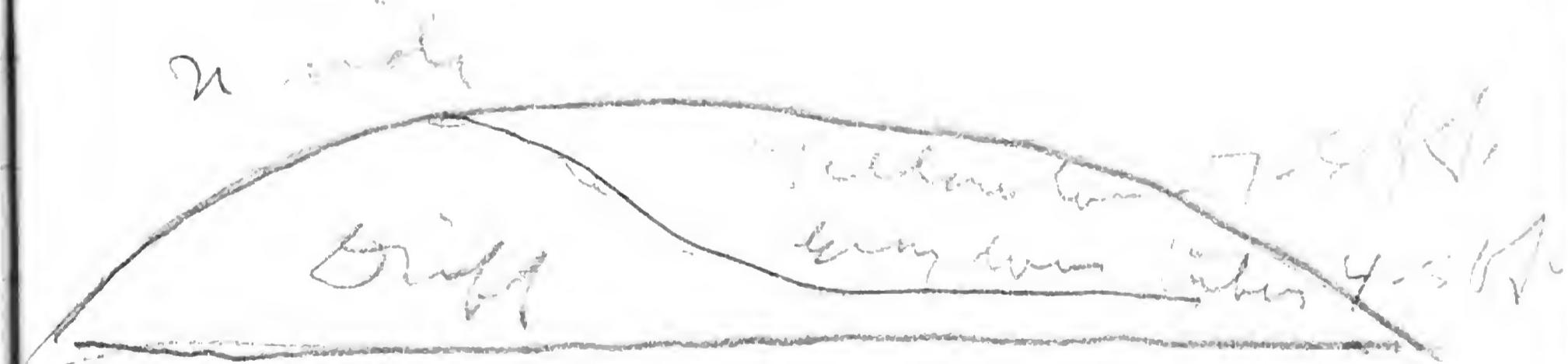
Blue loam, white sand &  
yellow soil  
below talus

Aug 27 from  
m

46 ft 13' 10"

The talus slope is about 8 ft  
high & shows good evidence  
of erosion. The talus  
is composed of talus  
& sand (no gravel or rock)

Cut 21 mostly sand  
20-28 in high S,  
much lower N.

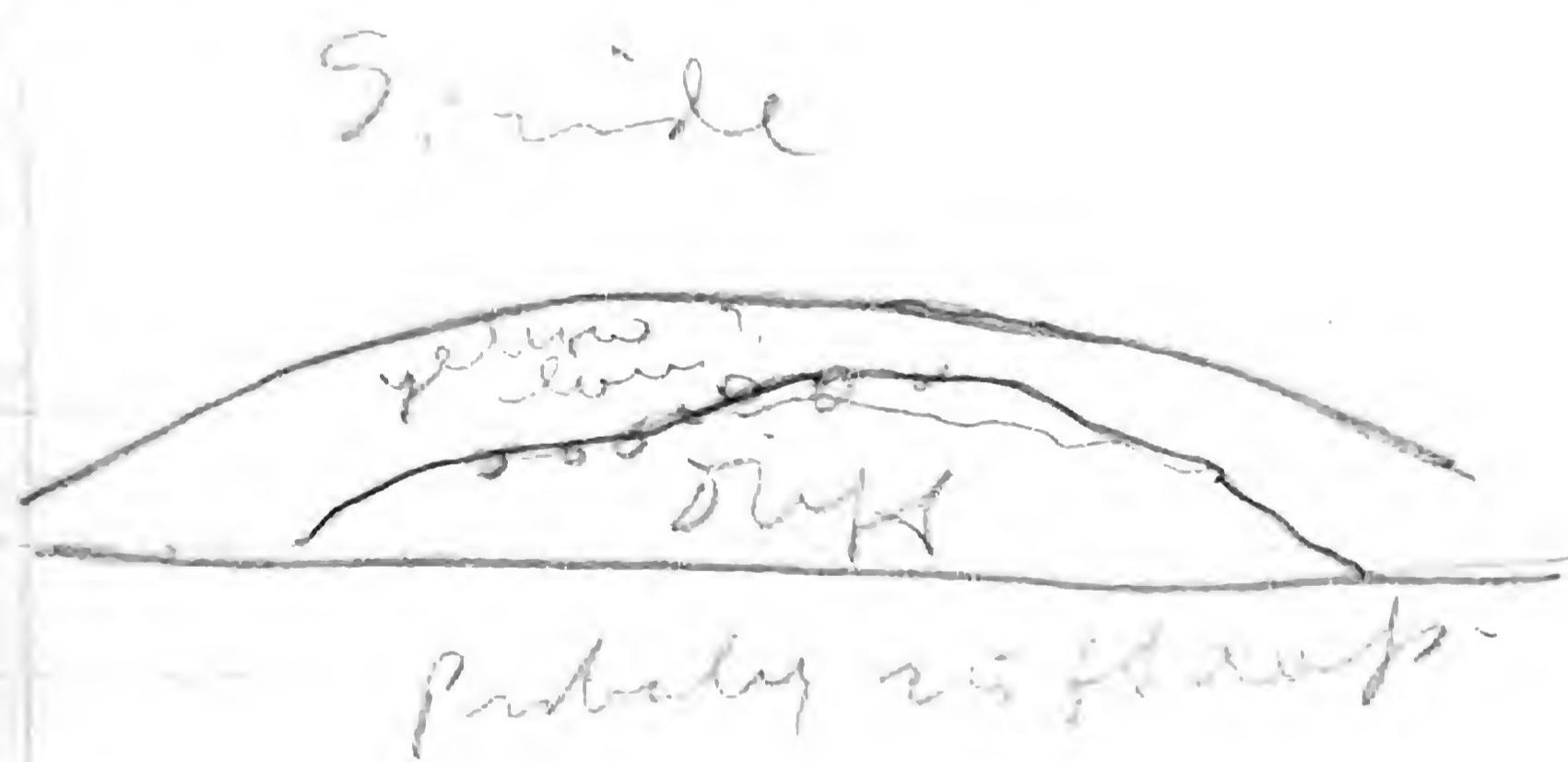
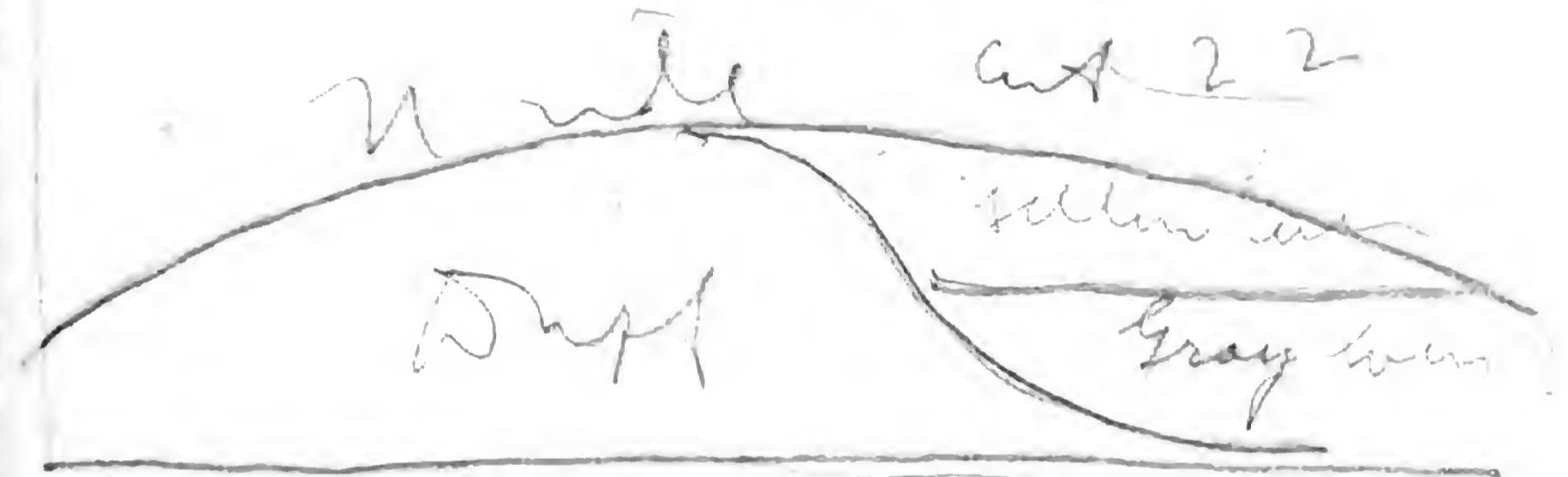


S. side shows much drift,  
& some loam on top.

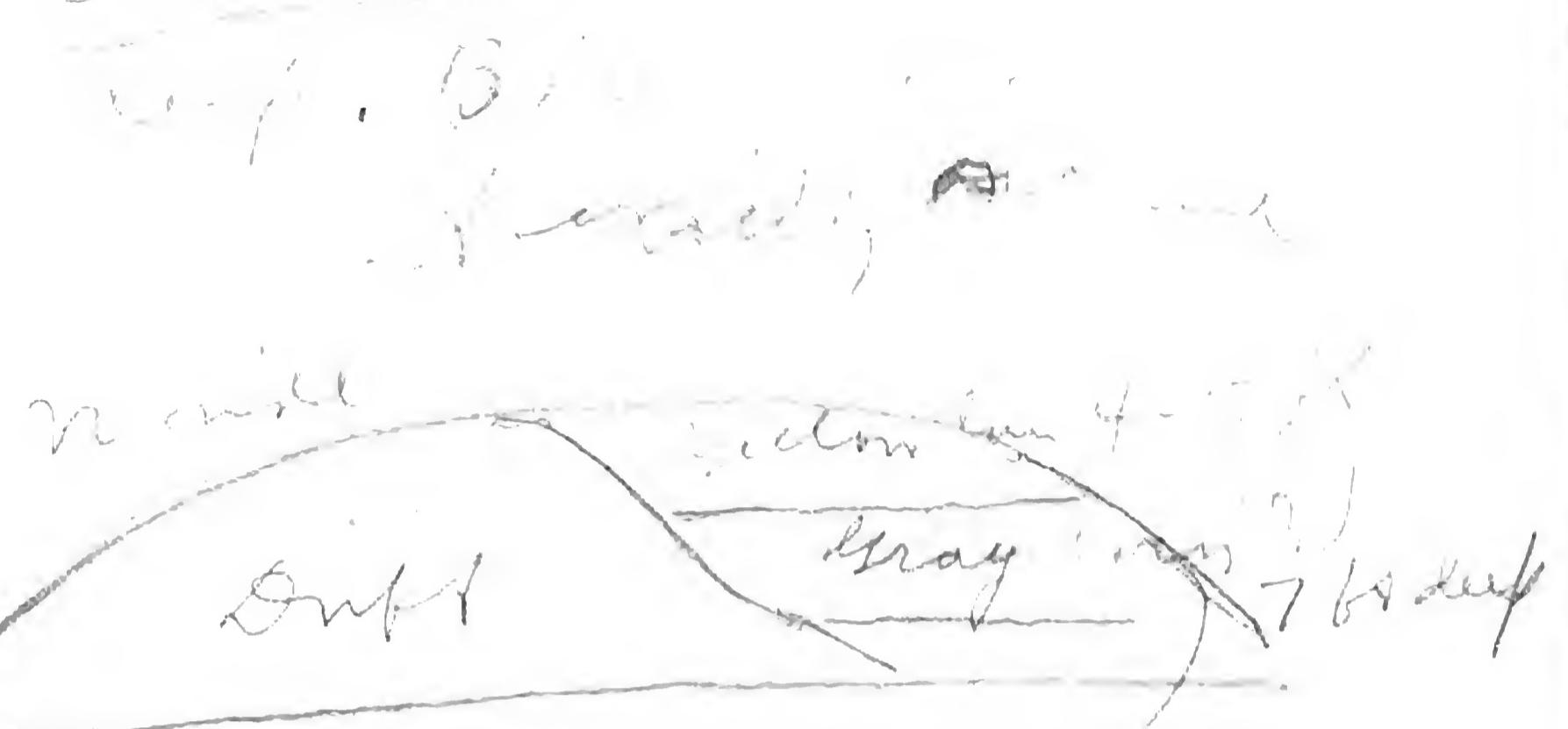
Aug 27 1948 C.R. - mid elevation

Cut 22 is several layers  
thin & V is very  
sharp on N. side  
Dinner Plate thickness  
shallow.

The S. side is much  
smoother & flat, not  
sharp & flat (less?)

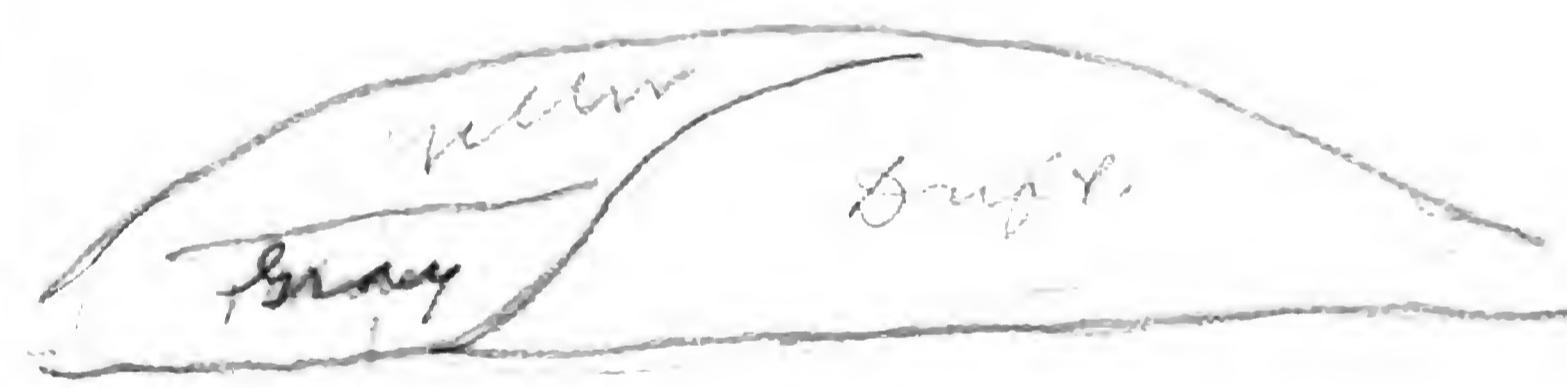


Cut 23 - west of 25 W



(See sample)

The S. side is smooth



69

Cut 24 - large, 10' thick.  
Bottom brown, top white  
(white layer 3 ft thick)  
new base at 7 ft. Is  
this gray layer?

Reached Sedalia at 7:10 AM  
I left at 7:30 for Manning,  
Harriss soon to C. L. Western  
& caught train for Harlan.

Reached Harlan at 9:45 AM.  
Had been without food  
all day, since the 5<sup>30</sup> AM  
at Corn Raff DS.

Cold night. Was very  
rheumatic in left hip  
and back.

Aug. 23-1913 Sat

Zoo Game W. Hwy & I. W. H. N. D.  
R. G. Johnson with  
up miles in the afternoon at the

E & W. in his Ford car, wife son  
Allen & a son of Dr. Gus Moore went  
to Rabbit Hollow.

In addition to specimen Allen  
ran following plants:

|                                      |                      |
|--------------------------------------|----------------------|
| Zelkova                              | Pithecellobium       |
| Salicaceae                           | Magnolia             |
| Bursera                              | W. Sassafras         |
| Populus                              | Acacia               |
| Populus                              | Ribes grande         |
| Vitis                                | Celtis               |
| Gambier                              | Obelia pulchra       |
| Rudbeckia laciniata                  | Phlox                |
| Dipsacus canescens                   | Onion                |
| Alcea rosea                          | Dipsacus             |
| Green Virginia                       | Parthenocissus       |
| (Apocynum)                           | Euonymus             |
| the first and (yellow), marked a way | 2 <sup>nd</sup> cut, |

and 3<sup>rd</sup> cut south on slope facing  
west in the 10 min Rabbit Hollow  
shows both yellow &  
yellow leaves. No other trees  
found & saw no shrubs. (or)

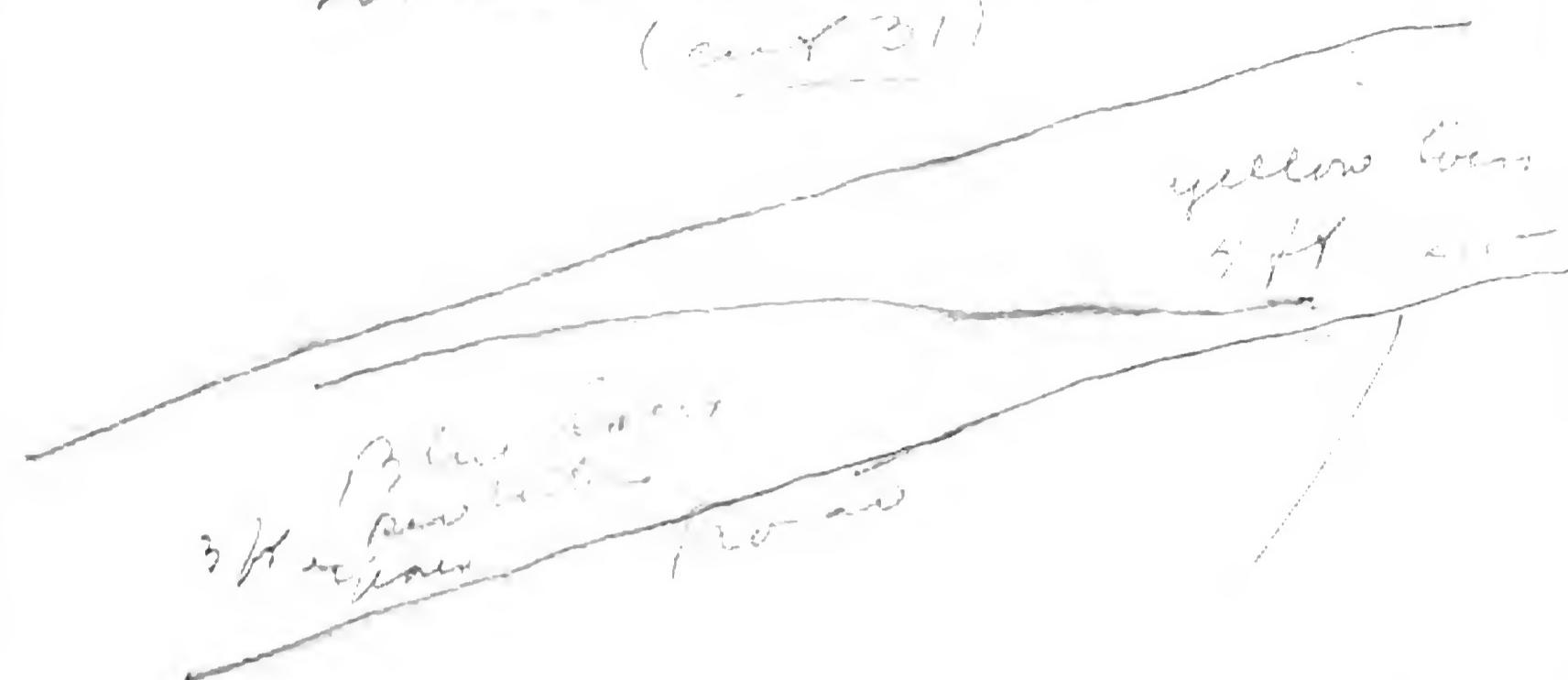
110 ft

137 ft

CR. 9.0 .000

mid afternoon

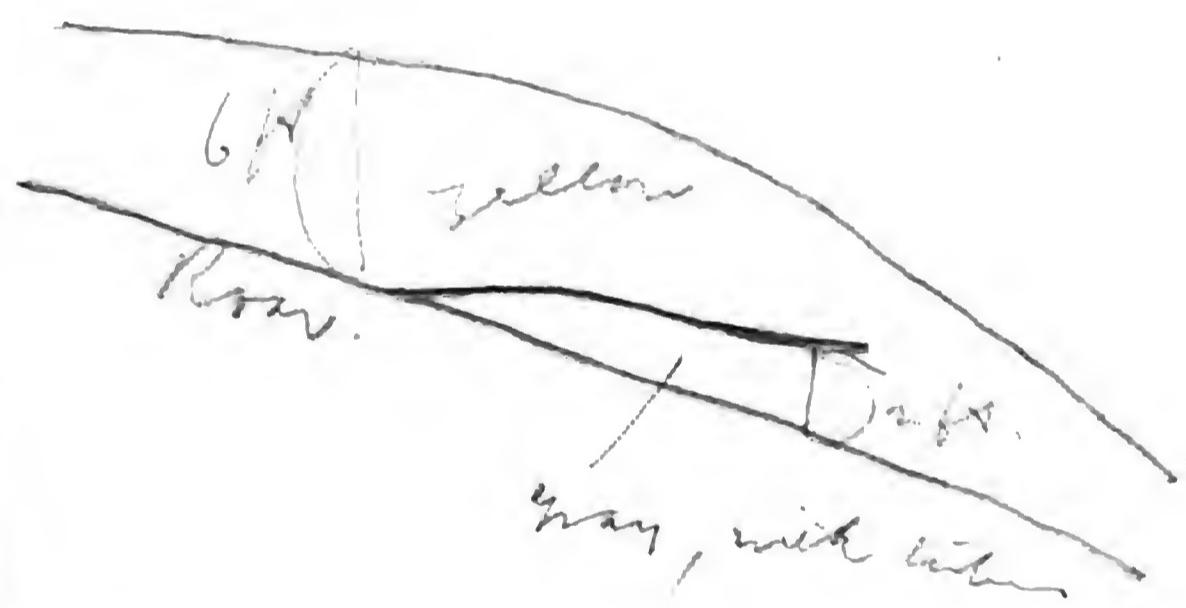
Wedge of 2<sup>nd</sup> cut  
(cut 31)



at the joint  
a red layer (very distinct)  
about 1 m. thick was  
penetrated by the tray  
under it.

Cut 32

The 3<sup>rd</sup> cut on the first, E.



No joints. The joint  
between the two is sharp.  
The lower part of yellow  
does tray streaks of gray.

Yellow layer is exposed on E. side  
partly May 10-79-38. Marked on map  
cross along road showing yellow layer. Back W.

for Horowitz's grave  
at Cut 32 on the surface  
Bird feeder station  
Harris Hill

|                       |               |
|-----------------------|---------------|
| Crinoid               | yellow (1 m.) |
| Oncopeltis            | Calymene      |
| Conularia             | Conularia     |
| Shark Rock (lower)    | Conularia     |
| Fusulin               | Envirogymnus  |
| Green Ash             | Envirogymnus  |
| Rhomphaea             | Envirogymnus  |
| Paraleptostom (green) | Goniatites    |
| Aren                  | Goniatites    |
| Bivalve               | Goniatites    |
| Brachiopod            | Goniatites    |
| Brachiopod            | Goniatites    |
| Siphonaria            | Goniatites    |
| Microfossils          | Goniatites    |
| Lacuna (brown)        | Goniatites    |
| Brachiopod            | Goniatites    |
| Kidney shell          | Goniatites    |
| Festiva? (brown)      | Goniatites    |
| (brown sandstone)     | Goniatites    |
| Predora               | Goniatites    |
| Diplopoda             | Goniatites    |
| Conch (2 sp.)         | Goniatites    |
| Agronomia sp.         | Cryptolite    |
| Graptolite            | Castane       |
| Desmodium             | graptolite    |
| Thermoceras           | Thermoceras   |
| Thermoceras           | Thermoceras   |
| Alcyone               | Thermoceras   |
| Ordovician            | Thermoceras   |
| Agassizella           | Thermoceras   |
| Spirifer (pink)       | Thermoceras   |
| Brachiopod            | Conularia     |
| Conularia             | Conularia     |
| Calymene              | Conularia     |
| Calymene              | Conularia     |

Aug., 24, 1913. - See,

1177 on 5th St., D.C.  
and  
On 11th St. to 9th St.

25 // 50 . went fishing S.E.

12.63 Cut 35 -  
The cut section has a maximum thickness of 20 feet. The slope is very steep, and the hill runs 5-6 degrees and shows excellent signs of weathering & erosion. There is a marshy, with grass, soil, & gentle a transition of weathered materials (see samples). Below few feet the lower half is composed of drift, obtained from nearby gravelly areas (not over 100 ft. in valley) with gravelly, sandy, & loamy material.

Higginson E- 1318

Frogs & small birds will appear  
here along the river. - Bear have

trip I up the stairs  
with following:

✓ Orobanche

✓ Equisetum laevigatum

✓ Amorphia canescens (L.) Gray. ex Willd.

✓ Heliotropium curassavicum L. Desmodium

✓ Vernonia novae-angliae

✓ Trifolium pratense

✓ Carex

✓ Kallstroemia hirsutissima

✓ Psoralea alata

✓ Salix lucida

✓ Euphorbia corollata

✓ Stephanomeria paniculata (Pursh)

✓ Leptodeira septentrionalis

✓ Helianthus annuus

✓ Camassia esculenta

✓ Aster laevis

✓ Claytonia sibirica

✓ Staph. shortior

✓ Desmodium illinoense

✓ Heliotropium curassavicum

✓ Solidago canadensis

✓ Silphium integrifolium

✓ Borodinia austromontana

✓ Asclepias verticillata

✓ Solanum nigrum (?)

✓ Anemone fruticosa

✓ Oxygraphis floribunda

✓ Solidago rugosa

Four small cuts on N. side of NE 1/4 29-79-38. show yellow loess (see map).  
Two smaller cuts on S. side SW 1/4 29-79-38, show yellow loess. (See map).

Two cuts on SW 1/4 S.E. sec. 29-79-38 show yellow loess. Best one is larger.

Cut 36 - on S. side SE 1/4 29-79-38 shows 5-7 ft. of yellow loess.

Cut 37 - on S. side SW 1/4 29-79-38 shows 5-7 ft. of yellow loess.

A deep yellow loess layer with sandstone at

Cut 38 - same W. yellow loess 5-7 ft. (79-38)

W. of S. Expos. W. S.E. sec. 29-79-38

Cut 39 Cut - white sand & W. yellow loess

Photo - same as cut 38

Map

Tubes Shows

yellow loess

cut 37 - cut 38

W. of S. Expos. W. S.E. sec. 29-79-38

7 ft. thick

→ sandstone

The road is gray with  
yellow lines & clean.  
(ax 15) near S.W. cor.  
N.Y. ~~Imperial Hotel~~ rec. 17-79-58.

Blue lines (yellow - crossing)  
iron rails, wood rails, iron  
(rec'd) yellow lines above

Saw also, many trees

various of trees. See sample, gray locs.

At top I saw 4 locs

1160 under

1174 - CR 92 P

1308 = at hotel at 5:45 PM  
In afternoon drove me with Sheffer to Dennis  
Took photos 23x x 24x  
of "Lincoln Park" N.A.  
Escher's place on the E. side  
of rec. 19, Lincoln Twp.

1174-3744 CR 92 P

CR 92 P

mid afternoon.

August 25, 1913 - Mon.

Halfhill Hill - 1358, Wm. M. Foster

and I. A. D. and J. H. Newell

Cut 41 On slope of hill 1358

had a cut across the road

5-7' of sand

Cut 42 Cut 6 is on slope facing

W. S. on N. side of hill

its lower 2 ~~to~~ ft. is  
distinctly gray brown with  
turbules & fissures (see file)  
and this grades up into  
yellowish brown. The

transition from 200 to 1358  
is quite gradual.

The yellow brown is rather

on the N. side the transition  
is more abrupt.

Cut 43 Cut 4 at very low elevation  
eg rusty hard pan.  
first active line the slope may  
be nearly, then only very

lovers with broken fragments  
Could not make out much  
more.

Yellow sand - 4-5 ft.  
yellow & contains many  
rounded cobbles, stones,  
or larger pieces of slope  
- some small nodules  
- appear at surface.

Slope base E.

Cut 44  
Cut d, in slope, like facing  
E. The base was dark  
yellowish - 4 way less, then  
gray below & becomes  
yellow. This is gray lower  
(nearly at very base) with iron  
tubes & scattered rounded  
sand or fossils.

It is probably 2-4 ft thick  
above it, <sup>the</sup> as (with gutter  
on side) are 5 to 7 ft. but  
is very porous. Shows yellow  
loam, heavy, tubular

top of cut - 1417.

Photo 5 v 6 - view from south end of cut.

3 of 6.

Cut 45  
Cut e is not very distinct but is a  
gray loam - towards base

Cut 46  
Cut f, a red much loamy  
soil - fine texture - top  
of base. Then ~~dark~~ gray  
streak) but yellow near top

Cut 47  
Cut g, yellow above, then  
brown streak & yellow  
gray streak - with iron tubes

Cut 48  
Cut h, - 1467 - there is a low  
cut on very gentle slope near  
top of plateau, which  
shows gray loam - with  
iron tubes, with very  
strongly rusted bases  
above (5 or 6 in. or more)

I could not make out  
distinct yellow layer, but  
there may be some.

It must be very thin

Cut 49 same as

Cut i. is 3-4-<sup>ft</sup>, but largely overgrown. The little gallery on south side exposes lower bed.

The usual gray shales, with good gray lenses, iron tubes & all, but no fossils, appear to way up.

Above this yellow.

Cut 50 Cut j. is similar - facing S. Not quite as prominent.

Cut k. is practically as yellow as.

Shows little cut; gray in low

Cut l. is 4-6-<sup>ft</sup> mostly yellow but seems to show gray, as does Cut m.

Cut m. shows gray lenses below

on yellow. <sup>part of sec. 13.78-40 two yellow lens exposures, see map.</sup>

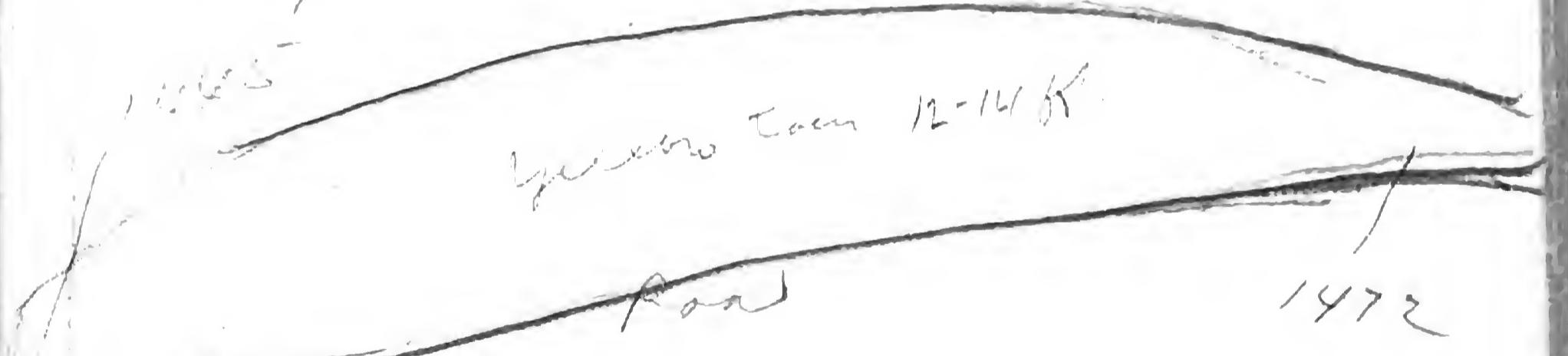
Cut n. is on a rather small slope, facing E. Gray layer is exposed for 1/2 way (5 ft vertically) up the slope & the rest is greenish yellow. No iron tubes, quite a lot of

concretions & some iron.  
The shales are 10-12-<sup>ft</sup> thick  
yellow in most cases.  
*Carychium*, *Lithostrotion*, *Leptostrea*,  
shells like *Leptostrea*, *Leptostrotion*,  
*Striella* & *Hastula*, *Leptostrotion*  
& more fine-grained ones.

Just under a small  
moderate form

Cut 55 - Cut o. shows yellow layer above &  
along side, quite a bit of gray  
with thin layers of sandstone in between  
drift at foot of slope.

Cut p. is the deepest cut on  
slope



gray loam  
The gray layer shows only  
at base bottom, about 1-1/2 ft.  
The line is quite sharp - the  
yellow layer just above is more

mottled than higher up.

The yellow layer is a calciferous  
of western horizon & is less  
fossiliferous, but contains some  
shells. It goes back over  
modulus.

Base of cut 1445 (bottom 54 cm.)

About 150 yds long,

Top of road 1472  
yellow layer 3 cut. See map - sec. 15-79-40  
cut 57 Cut 57 is long, yellow above, just  
a little gray toward base &  
red mottled at base.

Stopped at Portsmouth.

Dinner at Portsmouth Restaurant  
Feed barn.

R.R. 1360

1412 is top of drift above r.

cut 58 Cut 58 - shallow, along road,  
shows drift almost to

top of ridge (at its highest  
point) There is only a thin  
seam of yellow sand on top.

cut 59  
D. - Shows sandy drift.

(cut 58) Cut 59 shows a thin  
zone of gray sand. The drift over  
above gray sand shows a bed of  
S. E. sic (S. terebrans) well drift  
down again.

cut 61  
Cut 61 - shows sandy drift  
with scattered groups of S. terebrans  
not thick. 1450 ft.

On high ground - here  
Polygona remains  
& scattered drift.  
Barbarea strigosa  
Arenaria can.

cut 62  
Cut 62 shows the thick drift now  
(10-12 ft. exposed) with few  
large nodules & fragments of  
shells, Recognize S. avare-

This cut slopes S. & at base  
shows Kansan drift at base. goes up hill S,

Cut 64 X shows drift on left, -  
with much reddish clay  
layers at top, sand & iron  
nodules in clay, sand,

Creek 1385

Top of hill 1410

Top of Kansa 1445

Cut 65 Top of road 1485

Y Cut rises Kansa at  
base & up - then a  
strat of gray loam,  
vertically about 4 ft. with  
few spec. of Kansa.

Then yellow loam with  
large iron nodules, iron  
shells scattered through,  
more than in gray.

The cut rises about 4  
ft above top of road

The upper part of cut shows  
how many small iron nodules &  
iron tubes.

The difference in color on Y  
(which faces W.) could be seen  
a half a mile W.

Cut 66 Cut Z is not deep but  
shows gray loam thicker,  
with many small nodules, V.  
iron tubes. I saw no shells.  
Upper part yellow.

Cut only 4-5 ft deep. Hill  
steep.

Cut 67 Cut A is 7 ft deep, overgrown &  
shows yellow loam Face E.

Cut 68 B - facing W. Similar to A.

Cut 69 N. of 68 a cut in road shows very thick iron nodules

Cut 70 D - " " " - gray loam shows  
tubes & not many nodules  
yellow above.

Cut 71 shows gray and yellow  
loess. A low cut.

For dad to see remaining  
cuts,

Aug. 26, 1913. Tues.

1323 = RR JVP depot

Another quiet clear day.

1305 - road to E

Looked again at terrace cut for  
of sec. 20, T9 38. (see notes, sec.  
Aug. 24)

In Nth. part of 31-T9-38 dist.  
appears along road which has  
just cut into sand. Sand, white,  
slimy, mostly small.

There are elevations E. of this  
cut which have the appearance  
of old terraces, but show no  
trace of sand, - only yellow loess.  
They are near top of ridge &  
quite extensive.

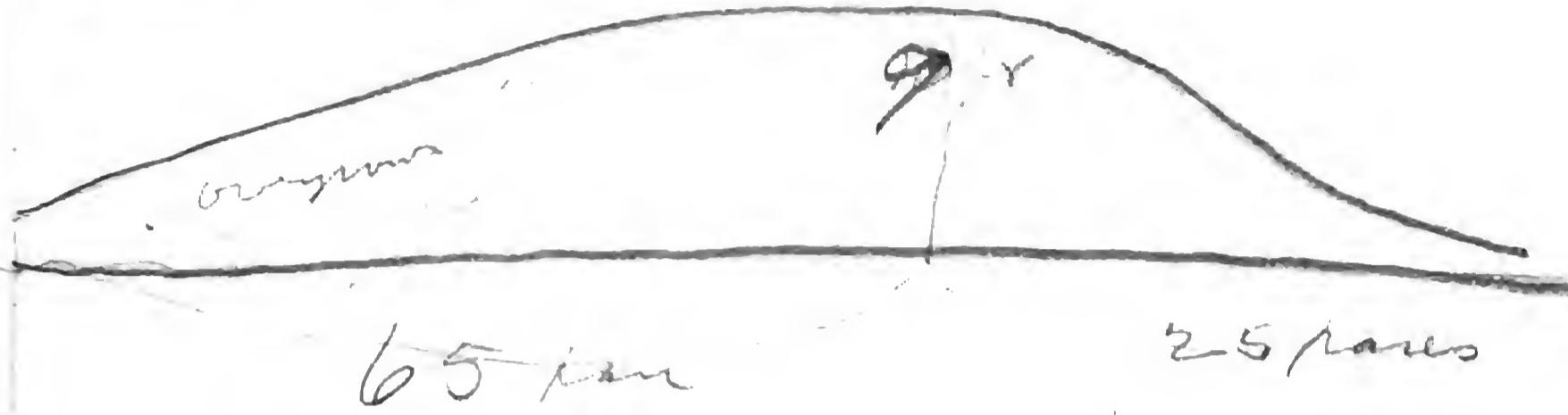
Corley - RR - 1260

Cut 73 Cut E just above Corley is in  
end of terrace-like plain.

It is over yds. long, 9 ft  
deep. It shows yellow loess,

loose, with some way, locally  
no nodules or fossils.

W. side cut E



Zooile sample from a pt. 8 ft. below  
top of cut at highest pt.  
from *Salix nigra* & *S. discolor*  
in bottom land at Corley.

saw a lot of fine walnuts.  
all the terraces below Corley  
show yellow drift, <sup>in woods</sup> yellow cuts

stopped for dinner at  
Hardy's Fredericksburg Inn.

1274 - terrace in front of Fredericksburg  
Inn

1250 - River bottom N.  
just below bridge N. of  
Fredericksburg, tree <sup>is</sup> <sup>& in drift</sup> <sup>old</sup> good  
bar. Few in man. Shells.  
no shells on it. These stream

are very sandy, loose.

Cut 74

Cut F is over 100 ft. above  
12 ft. deep  
the loess is sandy, gray,  
with many dark streaks &  
streaks of yellow reddish  
material (yellow of course)  
few nodules.

Floors of floors very sandy  
with a few large talus & few  
fragments <sup>of</sup> ~~and~~ shells.  
In the 12 ft. floor there  
are streaks - 6-8 in. apart  
& cap. See samples. The  
latter overwashed - yellow.  
All talus (alluvium) yellow  
to be gray <sup>similar to 74 but smaller</sup>  
~~and 75 also shows gray~~

Cut 76 was just rising out &  
showed only yellow loess.  
It is 4-5 ft. deep. Contrast  
with 74 is strong.

Returned to station

Aug. 27, 1938 Wed.

Spent afternoon up hills  
and ridges

In afternoon went up to  
Baugham Canyon,

1261 elev., N.E. (C. or W) at  
intersection with road from  
Baugham Canyon.

Cont'd  
Examined the Baugham Valley.  
There is a very rocky slope  
at base - scree containing  
the growing trees.

The bank is about 20  
ft. high, but is a low,  
shumpy bank about 6 ft.  
only as clear. It is gray  
brown, brown below. Flowers are  
~~mostly~~ <sup>mostly</sup> 1-2 in. (fully  
near base.)

The gray soil surface is  
best at about 6 to 10 ft.  
below top. The con-

station 13745

CR. 90.225

mid atlantic

tubes as low as 1 ft.  
are some rather large,  
or rounded, & others  
sheet like. The water may  
be red.

Downward the bank is  
irregular, without ledges,  
with some horizontal, &  
then the ~~irregular~~ <sup>rusty</sup> band  
appears. (at about 136 ft.)  
At 137 ft. from top of the  
rusty band surface the  
stuff is less than 1 ft. thick.  
Most of it is darker blue gray  
& has rusty streaks  
through it.

The gray layer runs down  
10 ft. Then there is a  
similar layer, but rusty,  
with horizontal rusty or  
brownish bands, & brown  
brownish streaks or bands.

as if remains of glacial drift  
had been washed down  
& tiny particles of sand  
left. The water at  
spring seems to have just  
just fallen. A fine  
there are few very tubes  
in lower part. Looks  
water laid. The gray  
layer is hard when dry  
was iron tubular & a few  
many larger, rounded nodules

1309



Samples      brownish

The top about 1-2 ft. of ~~blue~~  
& yellow stuff, but evidently  
part of same layer.

Covered by roots, etc  
top of bank 1309

Base of shungup part = 1379

General level of bricklayer = 1374.

The ridge is 100 ft. long  
about 20 ft. above top  
of bank. It is a  
long, thin, narrow, a  
part of general slope.

Picked up shells and stones  
above boulders. Corbicula &  
Me. avata were most abundant  
on higher banks among Sphaerium  
and Cypris. In

Cut 2 is an irregular series  
of exposures over 100 ft. wide,  
with streams whose water  
raps out.

At 1305, in do path,  
there is Kansan drift  
redish gray, hard, with  
pebbles. Just above  
this path there rises a  
bank of gray loam, about  
6 ft., with numerous

modules & pebbles. Above  
the Kansan drift is a  
just a small bit of loam,  
possibly sandstone.  
Below it is bank - gray  
stony like cut 1.

I cut into base of bank  
of Cut 2 found 17  
oxidized iron & below  
it many, many somewhat  
rounded fragments of

All this is above rocky  
places.

Towards N. end of cut 2  
there is an exposure  
one or two clumps,  
which shows at base  
6 or 7 ft. of rusty brown &  
less conglomerated sand &  
gravel, below which  
water raps out all  
along. This changes

quite a abruptly regimen  
into a heavy soft  
like stiff ice mass.)

The red color of both  
comes from the carbonates  
but the transition is  
quite abrupt.

There must be at least  
6 ft. of thin red drift  
& then it grades into  
at least 6 ft. more of  
red sand. On top  
of all there is gray  
loam.

The base of the now y  
gravel layer = 1307  
Under the sand there  
is a layer of heavy  
blue black stuff  
similar to Nebraska.  
Its top = 1313

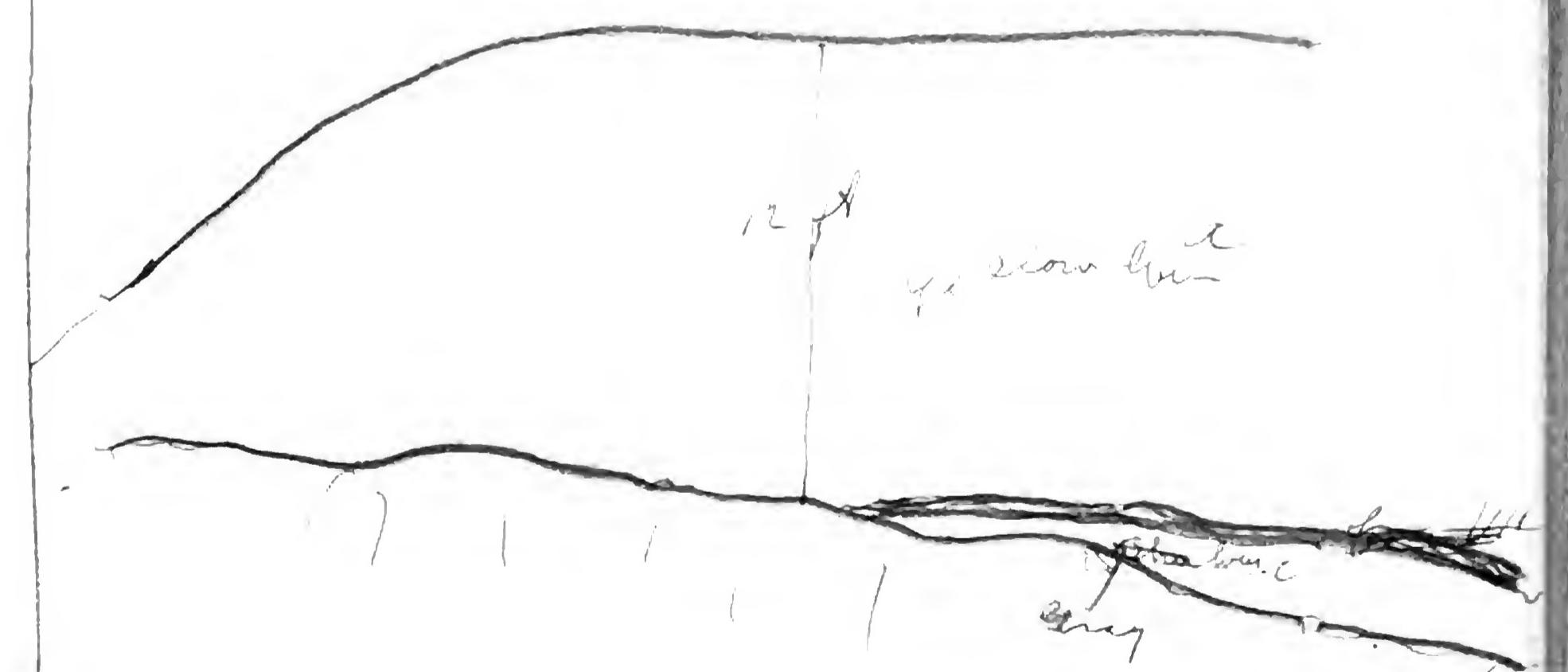
Water in river bank = 1290

Water runs out and  
this covers the surface  
at a very slight angle.  
The water in river is about  
8 ft. above level of ground.

1299 = 1300 - 1 ft. of drift  
1300 Redfield hill now

### Cut 3

Red field cut - about 12 ft.  
expose. Base about 8 ft. above  
natural bottom & the latter is  
about 8 ft. above river.



a = yellow loam with grayish mottles;  
compact, with some shells & shells  
scattered all through. See spec.

Water L. 1375

CR. 1300

mid afternoon

- b. The "tidy" stage is often made  
earlier, & probably reflects the  
true season.

c. The grass from River Ferguson,  
which are called the Palaeo-Indian  
but could not be more. Most, in fact,  
have been broken, and possibly  
lost some mottling <sup>now</sup> ~~now~~.

About. It is now.

Aug, 28 1911 Harry

117 "A. Y. H. H."

The wind is still

卷五

26

4

Preston

Sept. 1st 1951 1201

Two cuts near St. cor. sec. 25-79-39 are at  
edge of beach & show yellow loess.

Cut 77 { <sup>Topsoil 1-2 ft. - 100% loam  
Cut at 10' 6 in. from base 36-10-10</sup>

Shows grayish green with white stripes  
layer & yellowish brownish areas  
on top becoming somewhat flaky  
(gray)  
below, the leaves being  
yellow-green. The cut surfaces

mostly in little patches along river  
yellow beds shown in cut W. of 77. see map.

out 78 On n'th of New Y - 35-79-39, a inv

Wing) is white gray

Young and thin - very pale - gray.

Oxidized band also shown on  
wall and at base of cut 1216,  
Cut 79.  
Near 220 cm of 35-78 gray  
soil appears - off. It contains  
small nodules giving it the  
earthy brown color.  
In top of the same cut about  
2-3 ft below

Cut 80. Shows gray streak & nodules in yellow loam.  
cuts 81 + 82 are along RR & were not examined.

Cut 83.

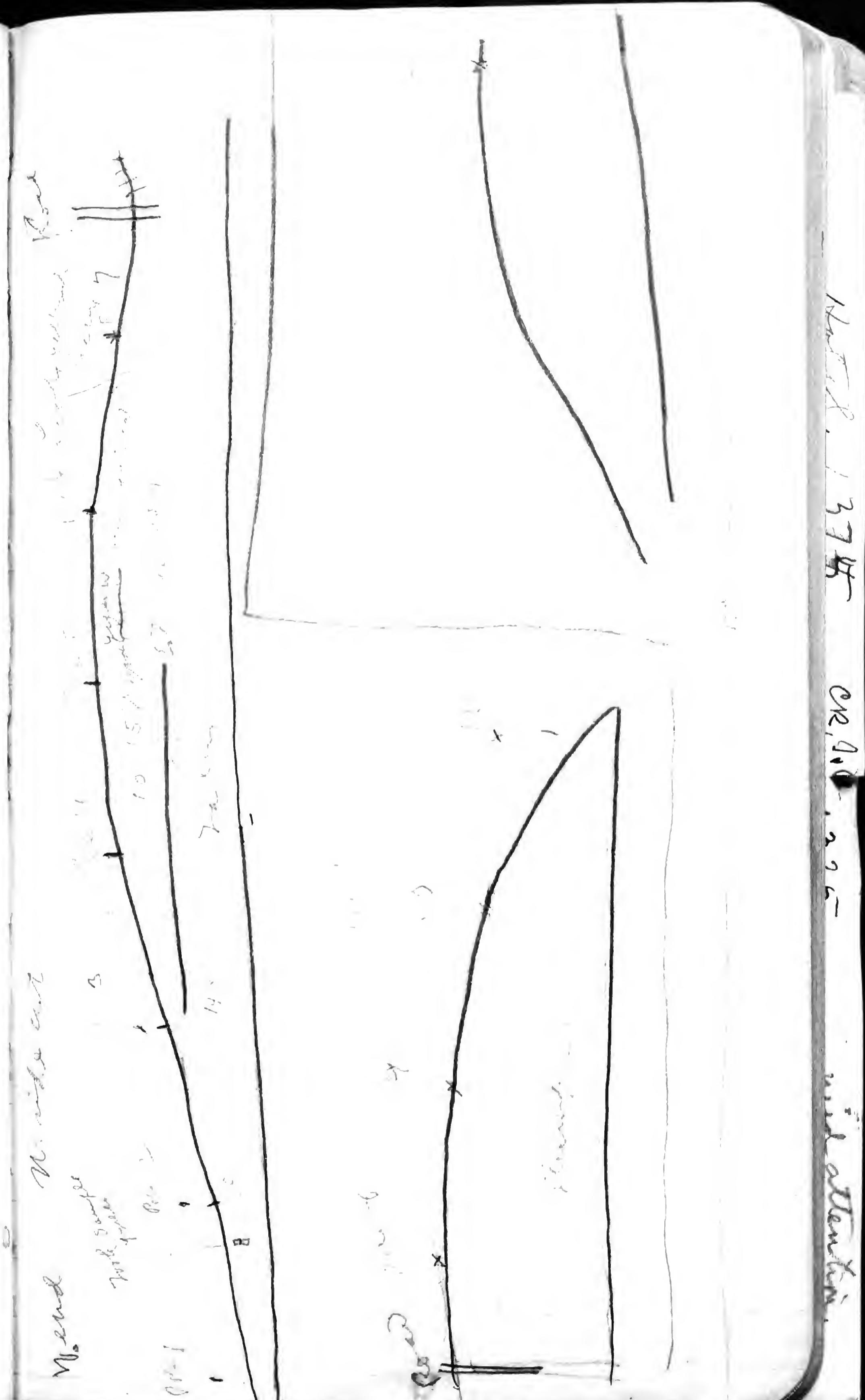
1258 - top of cut 1216 contains

in 1215 - streak at N end  
base of cut under top 1216

at 15 ft Bigelow took  
sample of off soil near base  
(was man's work) at 2½ ft.  
from top. + 7 ft above rock.

Off Pole 7, S. side. Gray soil  
runs up ~~above~~ 1201 on RR to  
1226

Highest part, S. side, off pole 5-30  
The gray loam has rather few  
iron tubes at 7 & shows at 4.



Plant P. 137 ft CR. A. 1.20 m

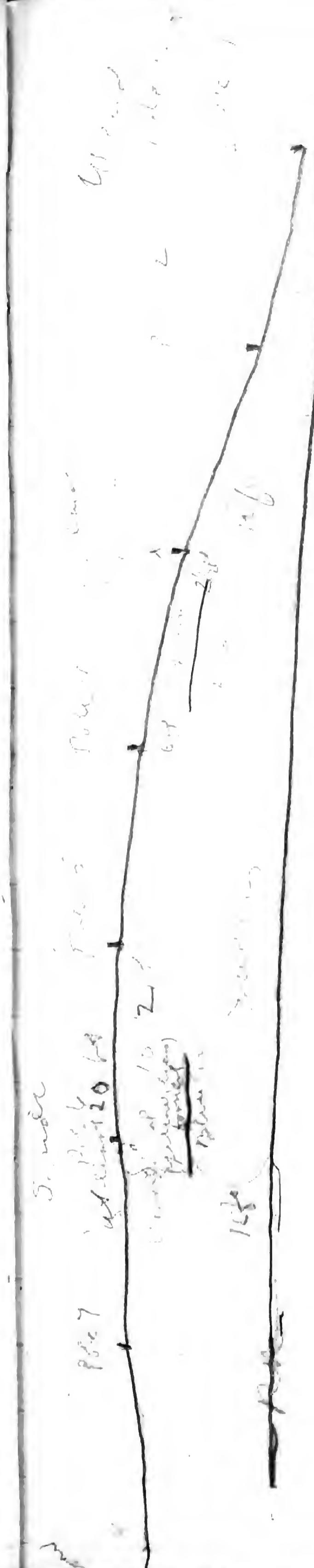
mid-attention

mid-attention

On S. side at height of  
10 ft. base - gray loam  
soil, with many small &  
grasses with the yellow  
fertiliferous manure islands  
vertically on hill side.  
The same exposure on other side  
is rather a bit stony.

Circular hill, about 100 ft.  
in width, yellow & 5 ft  
above base. Gray at bottom of slope.  
Rock weathered from below  
the lime is white, short,  
thin oxidized iron  
along slope, & sandy  
gray loam.

This cut across long ridge,  
which doesn't seem to run out  
either way.



At C. on N. side  
Rock rounded section 10 ft. high; gray 7 ft. on it.  
The yellow is weathering manure. The gray  
is like that in the hills above, &  
gray sandy.  
Circular hill, same as S. side  
in its upper 5-7 ft. light-colored  
brown tan, gray over  
bedrock.

11/27/40

11/27/40

11/27/40

Cut 84 in wagon road faces W &  
shows gray streak in road.  
Top of hill E. - 1258.

Cut 85 - Shows yellow loess (gray loess  
at top & bottom & yellow loess.)

Cut 86 - shows gray loess at road

with no streaks. (gray loess  
at top & bottom & yellow  
loess in middle)

Cut 87 - Shows gray & yellow  
loess in road.

SE  $\frac{1}{4}$  N.E. 14-81-57<sup>N</sup> faces N. Yellow loess at top with many  
small nodules.

Same - faces S. (S.cut). Shows drift capped with yellow loess

NE  $\frac{1}{4}$  S.E. 14 - Small hill with thin cap of loess. Drift shows  
on both sides.

S.E. 14 S.E. 14 - Drift shows well up hill. Yellow loess on top.  
Same - S. side. Shows yellow loess with small nodules above.

Cut 100 - Faces E. & S. of yellow loess. Much gray  
loess in cut. Reddish at base.

Cuts 101 & 102 show gray & yellow - loess

Cut 103 is old brick yard.

Cut 88 - a smaller RR cut

Cut 89 - a large RR cut

Cut 90 - a smaller RR cut

Cut 91 - an RR cut.

Cuts also on W side nos. 287 21-79.

Yellow loess at one gray layer,  
cut 92 faces E. shows gray & yellow loess.

" 93 - " E, " "

" 94 " W, " "

" 95 " E, " "

" 96 " W, " "

" 97 " W, " " on low hill

" 98+99 - yellow at top gray below. Low.

In evening went to Portion, met Mr. H.  
Shavers, and went to Laramie  
made deck for 9.50<sup>0</sup>  
31 days.

Aug. 29 Fri 1913

Started 3.4.9  
(beginning of performance) cuts 104-106

The road & cut joints washed

The yellow was on top of hill &  
many small nodules. Same on road  
west in first mile. At rail line  
Cut 111.

down hill almost no loess.

At rail line  
SE  $\frac{1}{4}$  S.E. 15-81-37.

down hill almost no loess.

At rail line  
SE  $\frac{1}{4}$  S.E. 15-81-37.

down hill almost no loess.

At rail line  
SE  $\frac{1}{4}$  S.E. 15-81-37.

down hill almost no loess.

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down hill almost no loess.

At rail line  
SE  $\frac{1}{4}$  S.E. 15-81-37.

down hill almost no loess.

At rail line  
SE  $\frac{1}{4}$  S.E. 15-81-37.

down hill almost no loess.

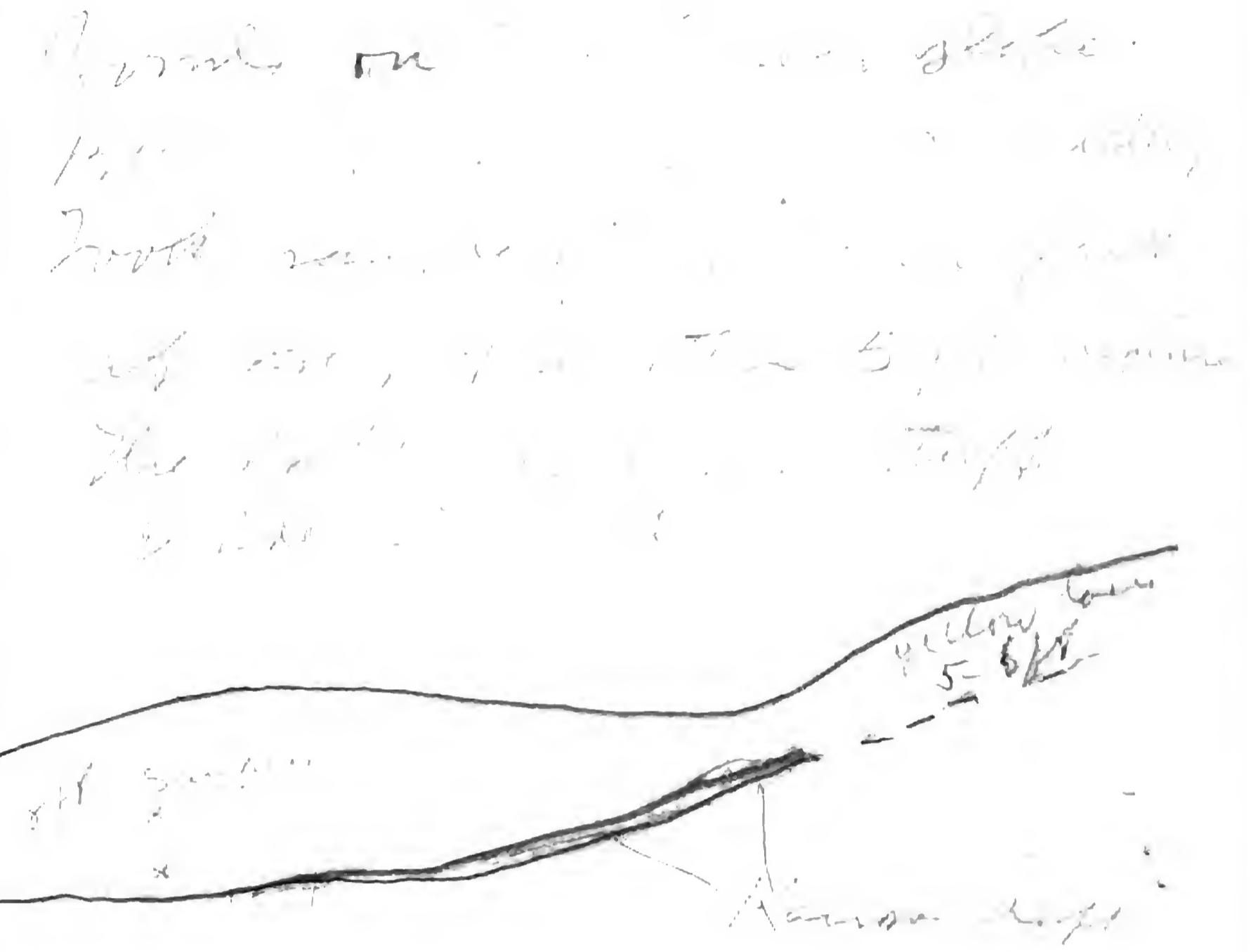
At rail line  
SE  $\frac{1}{4}$  S.E. 15-81-37.

Cut 114  
on E. side NE. 1/4 29-81-37 yellow loess  
appears, with small nodules in upper part.

Cut 115  
on E. side S. on 29-81-37  
there are two bands of  
yellow loess, - thin black  
bands between them.  
The upper band is about  
1 ft. thick & has some  
yellow iron oxide in it.  
It dips east.

Cut 116 <sup>leading west.</sup>  
Strong road, in slope facing E.  
Karrow runs up more than 2 ft.,  
with some talus at the top.  
On top there is a thin, black  
intermediate layer about 1 ft.

Cut 117  
the exposure on hill facing N.  
in SW. 1/4 29-81-37  
shows deep gutter & cut surface.  
A few small iron-stained pebbles  
are washed out at base. The  
greater part of the exposure  
shows a yellow loess 6-8 ft  
exposed, brown, little brown  
& black spots & streaks of white  
gray clayey. No nodules or



A nearly horizontal layer  
which contains gray nodules.

Cut 118  
On N. side of 32-81-37  
there is an exposure of yellow  
loess - 5 ft. thick, - with a  
few nodules & streaks of other  
material. See me.

Cut 119 - at base of clay slope facing  
W. drift appears near school,  
for some distance up hill.

(= cut 118).

At base, on N. side of 32-34-37  
there is a bank, on N. E. side  
of road, which shows 8 ft. of yellow  
loess. It is rather soft, but  
of the older type with grayish  
streaks and mottlings, and has  
some nodules (medium or  
small) (see samples), and  
shells are scattered through,  
especially in lower 5 ft. (see  
shells and samples.)

Reading at base of this cut = 1345  
at base of long slope west = 1265  
on bottom

This shows drift <sup>thinly</sup> at base.  
The Kansan is light gray  
and yellow, and has  
rather small boulders  
and pebbles, some brown  
Quartzite and some black.

C. W. RR at base = 1249

C. W. W. RR .. " = 1256.

Cut 120 - faces W. Drift - top of hill yellow loess.  
cuts 121 + 122 show much drift with cap of yellow loess.  
cut 123 - yellow loess. Faces S. 8-10 ft.  
cut 124 - Drift below hill. Faces N. & W. light yellow loess.  
The Grove to begin and grow  
in the S. of cut 5 & 6 m

Park top. I noted following:  
*Lilia americana* - very many on  
uplands.

*Red Elder* - very many on uplands

*Bur oak* - " " "

*Erythronium* - common

*Prunus americana* -

*Pyrus*

*Choke cherry*

*Ribes* gracile

This is a large grove, and in  
a very rough territory.

Picked up a lot of snails  
at a point = 1464 ft.

The top of the hill S. of this  
= 1480.

The snail patch was in brush  
and among trees, on W. side of  
road on a northw. slope.

Base of hill N. = 1374.

Cut 125 - A little drift at base, - 4 or 5 ft. yellow loess.  
cut 126 - Shows yellow loess.  
cut 127 - Yellow loess - 4 or 5 ft. - nodules.

Went N. from bridge to cut 128.

Cut 128 On S. end of 32-80-37. The hill is 200 ft. H. by about 100 ft. wide. Shows yellow loess on slope, some yellow loess & some brownish sand & gravel, which is very gritty. Yellow & a gray loamy drift & extends down towards base. Stopped at Bowman's Restaurant. Had dinner & coffee at 45 cents.

1318 - Depot C. Gr. W. of Barbina (C. + Mo a little over)

Took lunch at Brown's Restaurant (35 cents each) & few more at Avery - 25 cents.

Drove south and then west to opposite N. end of Bowman's grove.

128(a) Drift. Gray below, with iron tics, and some nodules. Shows in area. Yellow loess on top.

Cut 129 - Faces west. Yellow loess.

Several 200' marks. Some 100' marks. Most of them.

Cut 130 On S. end of 32-80-37. Old car of sec. 32-80-37.

Shows a yellow loess on steep slope & yellow & brownish sand & gravel. Yellow & a gray loamy drift & extends down towards base. Stopped at Bowman's Restaurant.

Bellay.

Then went to C. Gr. W. of Barbina, nearly Bowman's. 32-80-37.

New car of 32-80-37. Same black iron, clayey, brick, etc., yellow loess, lignite, sand, Hazel, Elm, Boxelder, Walnut, Sweet Oak, Maple, Franklin, Ash, Iron, Catalpa, Holly, Cedar, Hackberry, Robinia pseudoacacia, etc.

Cut 131 - Much drift on steep slope, little yellow loess.

Cut 132 - In rear of wrecker's shop. Red sandy soil showed in fresh excavation. Sandy.

Cut 133 - Faces N. On steep hill. Lower half drift.

Top = yellow loess.

Cut 134 - Faces N. Similar to 133.

Cut 135 - Low side faces S. Almost all drift.

cut 136 - Steep. Faces south. Lower part drift; then yellow loess, gravelly  
 then gray mud; then yellow loess on top.  
 cut 137 - Steep. Similar to 133.  
 cut 138 - steep. Drift at base; yellow loess above. Faces N.  
 cut 139 - similar to 138. Faces S.  
 cut 140 - drift; oxidized band; yellow loess. Faces N.  
 cut 141 - drift; yellow loess; gray streak.  
 cut 142 - drift; red bentonite; yellow loess.  
 cut 147.



Gray on top of drift  
 then yellow loess  
 below drift  
 now, the iron-stained  
 for b. Red by  
 yellow.

At top yellow loess has  
many small nodules.

(Leave back of paper)

faces N.  
 cut 107 - is on high side of bluffs;  
 and shows yellow loess with many  
 small nodules at base.

cut 105 - shows drift and yellow loess faces S.  
 cut 106 - is on low ridge, mostly drift,  
 while thin cap of yellow loess.

cut 107 faces N., & shows drift & loess.

cut 108 - Shows yellow loess with many  
small nodules, and drift below.

cut 109 - Shows yellow loess with numerous nodules.

cut 110 - Yellow loess - nodules.

~~cut 111~~

cut 144 - A low ridge. Drift, top - yellow loess.

cut 145 - Faces W. drift; loess cap. Gray streak?

cut 146 - Shows gray streak.

Between 147 & rec. on E. a cut with yellow loess  
& drift (one bed) no drift at corner.

cut 148 - Faces S. Drift. Thin cap of yellow loess.

cut 149 - Faces N. Drift; bentonite; thin cap of yellow loess.

cut 150 - Drift; yellow loess.

cut 151 - Faces N. Drift; yellow loess.

1000 ft. 37 ft.

cut 107 - 200 ft.

mid altitude.

Aug 30, 1913 Sat.

Cut 107  
The last hill on road 3, on horizon before  
valley town shows a good sample of the

beds, slope on S. face - very little  
below, but it is a fine horizon.

The drift is well up hill &  
yellow top of sandstone.

Drift sandstone at the bottom

of the valley S.

Cut 152.  
On E. side of 35° 81-37 a slope  
facing S (the north one) shows drift in  
way, with small cap of sand.

Cut 153  
S. of creeklet, on slope facing north,  
the road shows yellow loess at  
base, then drift which went up  
as this is carbon with a rather thin  
layer of yellow sand with many  
nodules at top. There is a reddish  
clayey layer above the drift.

Cut 154  
The 3<sup>rd</sup> m. on same sec. line is exposed  
along a long slope facing S. The  
greater part shows drift, well exposed

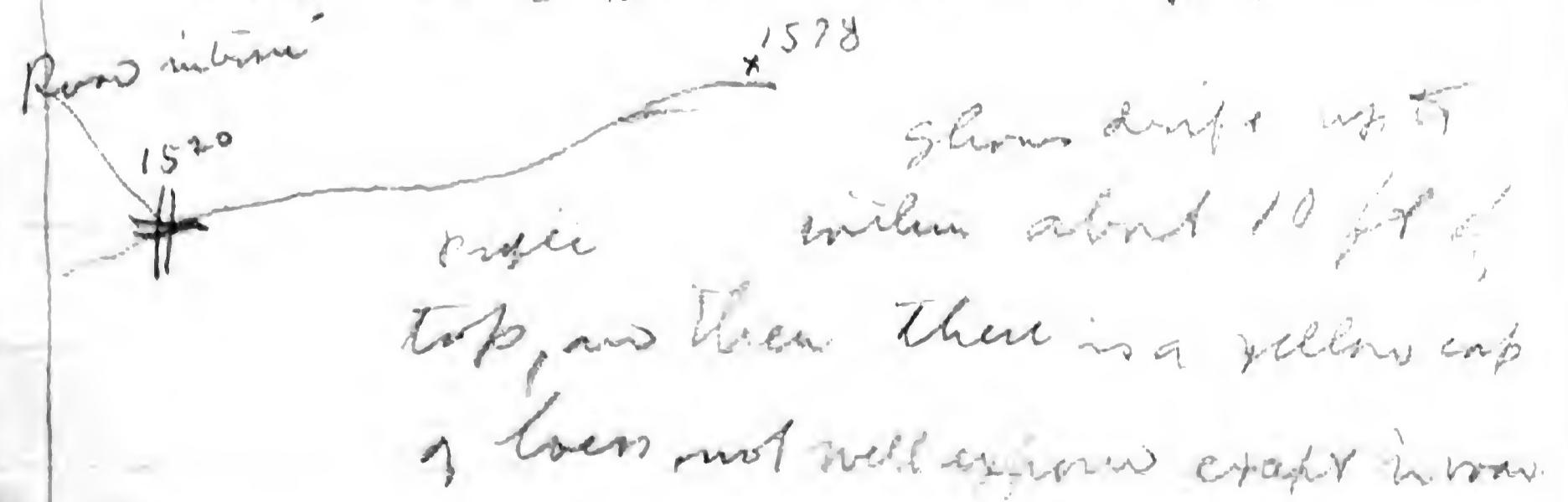
in gutter on E side. It is thin gray  
Kansan with small brownish pebbles,  
sand & sile, and lies 80 ft. above  
2 ft. a heavy, reddish joint layer  
with few pebbles, scarcely the  
reddish "Gerrito" which I have seen  
in many places.

A thin cap of yellow loam on top,  
the gray is here & there, if exposed,  
<sup>Cut 155</sup> cut No. com. 1 - 80-37 drift Tues N.

appears in bed. This sand is washed out  
at base of slope north (in next sec.) &  
a bank on E. side (sec. 1) shows a  
red sandy layer on drift. This runs  
up E & S. faces often on hills.

Reading at intersection - 1520

The hill south runs up to 1578.



<sup>Cut 156.</sup> The slope S. faces you can see with  
many nodules, just like those in drift  
below it, goes only as low as 1520 ft.  
Bottom of valley measures 1538 ft.

<sup>Cut 157</sup> S. face a steep bank shows  
drift for 50 ft., then upper 30  
ft. shows loam.

The drift ends by a sharp  
as shown. Above the loam, which  
here consists mostly of fine sand, a  
joint (say 10-12 feet), with thin  
red sand from a small bank of drift.  
The red layer is a good soil builder  
& in its upper part very suitable  
in tiles (see section). This  
goes up hill for only 10 or 15 ft.  
& then comes yellow loam with fossils  
& many small pebbles.

See samples of drift & yellow loam  
The fossils were mostly in lower  
part of the yellow loam, - on lower  
bank of slope. The weather was

top of yellow loess are many small, thin <sup>lower</sup> part where fossils  
are easily found. Some large nodules, see map.

Dendrites at top of slope were  
common to now scattered below  
of gray loess. Cut at transition  
is now section is as follows & abrupt.  
This exposure is just N. of cut.

S.E. of this exposure, across road,  
there is a dense thicket of low  
scrub oak hazel. Besides thick  
rock plaster - looking N.E.

a = map. In NW 1/4 sec 42-80-37

t =  $\frac{1}{2}$  -  $\frac{1}{2}$  m

cus 158 <sup>sec 1/4</sup> T. 50 - 20 ree +  
T. 50 - 20 ree + drift & loess.

In SW 1/4 sec 2-80-37

there is a big patch of scrub  
oak & hazel.

In both cases few sprouts

cus 159 - Face S. Drift at base. Yellow loess.

" 160 " W " " " exposed in cut.

" 161 " E. Drift at very base. Yellow loess above, cut 4-5 ft.

" 162 - same, S. side yellow loess, cut 4-5 ft.

" 163 - Face W. Drift at base. Yellow loess above.

" 164 - Face N. Drift. Yellow loess.

" 165 - Drift & loess.

" 166 - Yellow loess.

" 167 - Yellow loess.

" 168 - Yellow loess.

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" 326 - Yellow loess.

" 327 - Yellow loess.

and then yellow loess.

cut 4 At slope, part 2, in SW 1/4 of sec 8-80-31 shows drift & base then gray streaked yellow loess.

A number of little hills by  
this point have been scarcely  
So far in elevation w. The  
country is more gently rolling

There were large trees while  
& the lower drifts above them  
are low & scrubby.

cut 5 In SE. 1/4 of sec 9-80-36 there  
is a sand pit half way up a  
gentle slope.

It shows about 7 ft (less than  
exposed) of sandy sand, some weathered  
consolidated, cross-bedded, with  
larger pebbles & some boulders  
in lenses. Also a few gray  
hard clay beds with veins  
of sand in them.

This is at the top of a hill  
& contains a red layer of sand  
near its surface, weathered.

The surface was covered in part  
a faint red stain which  
was probably due to  
cut 6 A shallow excavation at about  
same level on N. side of  
road shows that a bed of  
fine, coarse sand was found.

Above on this slope is  
yellow loess.

At base on other portion  
ran into bottom of ravine. Could not  
see if weathered.

cut 7

cut 8 At 100 m. from 10-80-36  
the drift goes down & over  
~~top~~ <sup>top</sup> of low knoll, where a  
red clayey, sandy layer appears  
on top (same as sand pit?)  
and then a very thin cap of  
yellow loess. Faces W.

Start 137 ft

CR. 90-251

mid afternoon

Cut 9 on slope of same ridge, facing  
E. shows drift of gray loam  
resting on sandstone. It is  
thin in part (1 mi) the  
drift is 10 ft. or so on E. side.  
The rather dry soil facing W.

cut 10 In S.E. 1/4 sec. 36  
shows red sandy loam, with  
an upper redder layer (10 ft. above)  
a little more than half way up hill,  
then a layer of gray loam,  
resting on orange ferruginous.  
This is not very clear especially  
at fine contact with sandstone.  
On top of hill (about 1/2 way  
up upper cut) is yellow loam.  
Top of hill E. = 1690!

A few small scrub oaks appear  
just above bank of ferruginous green  
loam on top of ridge.

The layer that appears something  
like blue loam is chertaceous below,  
& runs quite a ways up hill. It's

yellowish brown & has white streaks  
the surface is a good deal  
worn off & it looks as if it had been  
fertilized & leveled down.  
It has a thin covering of  
at time of leaving 1695 was  
reading on top of hill. Hill was

cut 11 On E. slope of same ridge  
drift appears below.  
cut 12 In S.E. 1/4 sec. 36 a hill  
(top = 1704), rather dry,  
shows red clayey ferruginous &  
above is yellow loam with some  
nodules. Shows no joints.  
Bottom at sec. cor. W. = 1659

cut 13 In S.E. 1/4 sec. 36 a  
hill reading 1757. shows on face  
to W. Kanner drift with nodules &  
above, a distinct blue loam with  
iron tubes, & this from by  
oxidizing turns into yellow loam.

Water L. 1375 ft

CR. 100 - 2951

need attention.

with many small ridges and  
top few inches thin &  
gravelly material.

Yellow - same bottom of any  
new hill.

Cut 14 On Lick Bay Dsp. N. side of one 18-ft  
center of 1740 sand is a shelf  
or band of yellow, reading 1735.  
The hill then rises to 1774 &  
shows yellow layer on top. It is  
evident that drift was even  
above 1735 ft. so that layer  
must be thin.

This is a great cut running  
somewhat NE & SW., which is  
evidently the divide.

Cut 15 Near Rd. no. 82 m. 12-80-36  
the slope facing S. shows much drift, &  
a thin cap of yellow over.

Cut 16 On the N. slope of same ridge  
yellow layer appears at top, then

strongly yellow and very thin  
at S.E. corner. Height 1770  
This is the divide, which here

Cut 17 ~~run~~ <sup>drift</sup> of thin loam 700 ft.  
Cut 18 - faces <sup>drift</sup> of thin loam 700 ft.  
part of S.E. of Rd. m. 2-80-36  
a well 4-5 ft deep -

New. Octotree, 1000 ft.

strong yellow soil of clay, very  
thin 10-15 cm x 6 m x 8 ft

On front of ridge 5 ft. in. -  
well 3-9 ft. deep & stands  
almost full. Here they  
break a sandy soil

On back of ridge a yellow loam  
wells are common

As a rule they are here 40  
to 70 ft., and the plenty of  
water. A little sand or gravel  
now, but not much.

The son. J.W. Octotree, does  
well digging. Only two wells,  
one 60 & other 70 ft., over 50 ft.

1770 ft. 137 ft

CR. 1000 ft.

mid-attention.

On lower slopes, 25 or 30 ft  
the base of the cut to  
the valley.

Cut 19 Near S.W. cor. S.W. 1/4 2-80-36  
A little way S. slope dips  
well after a band of gray  
about 1 ft., with nodules,  
then a cap of yellow sand.

Cut 20 N. of SW. cor. of sec. 2-80-36  
a rather steep ridge extends  
to west. Its S. side shows  
very green loam top - 1738  
The N. slope is quite steep,  
at very top a fine yellow  
sand (one of it with small  
nodules) caps the ridge.  
About 10 ft from top yellow  
loam is at surface. At  
12-14 ft a very distinct layer  
of gray loam with white.

Then comes brown, hard  
top layer about 10 ft thick  
followed by a sandy  
material. To, thin sand &  
yellow sand.

1659 = foot of hill 21.

Down along road fine sand  
is scattered. From Kauka?

Cut 21 - wide sec. 4-35-81-36. Kauka locn.

At Shars's, in afternoon  
coming + 1720 at 9 P.M.

1658. 137 ft

CR. 9.0 - 2.25

mid afternoon.

cut 174 - Drift below (partly covered by loess fill); flings loess  
with tubes; yellow loess.  
cut 175 - faces N. yellow loess.  
cut 176 - loose sand away up hill. Then yellow loess. Surface  
not clear. In valley S. there is some sand.

Aug. 31, 1913 Sun

Reading in Shaver's column = 1638

Cuts 172 & 173 at the cut sec. 10, in slope  
face a drift about 1660  
of thin yellow soil to the south.  
On hill & Helianthus ground  
is growing over top of hill  
on prairie bank.  
cut 173 SW  $\frac{1}{4}$  SE, 14 12-81-37 - a slope facing N. shows yellow loess  
almost drift layer (and)  
at 50. cut face 4' 8" on them  
is a long ridge which runs Westward  
beyond the NW corner of the  
<sup>sec. 12 on west slope</sup>  
ridge with yellow loess.

35 yards E. of previous there is a  
bench on bank, in cut face 75' S.E.  
10' 8" on them

Looking S 95' S.E. - 1662 1676

1641

N. side, gray loess appears &  
extends down for 3' 3" feet.  
The gutter before 1-3 feet of it &  
shows that especially a older style

it was very loose & sandy  
tubes & great angular material  
(see fig.) the blue material  
gravel & angular material  
scattered in the soil.  
Upward on slope a very distinct  
drift layer, 4' 6" wide & 10'  
12' high, the surface  
line of the drift.  
Soil on top of drift  
(150' S.E.)  
showing 10' of the drift  
here very sharp.  
No drift appears.  
I would see nothing for a  
new roadway in yellow  
On S. side shows a border  
of loam & angular like material  
so very abundant material,  
in blue loess.  
(and)  
cut 172 A drift ridge - rather low.

Sept. 1, 1913 CR. 100-275

CR. 100-275

need attention.

Cut 24 (and) yellow ~~loess~~<sup>sand</sup>; gray streak; little drift at base.  
cut 25 (a) Drift at base; yellow loess. Fines W.

Cut 26 (") Fines W. Drift; loess cap.

Cut 27 (") Similar.

Cut 28 (") A long hill with yellow loess all the way.  
At center, W. of 26 or 30 gray

or N. 1/2 mile, gray <sup>loess</sup> becomes a loess

Cut - 2 - 3 ft. of which shows in  
N. side:



a = yellow loess 3 ft., with many streaks  
b = gray loess. Many streaks.  
c = more up the hill  
d = clayey gravel 6 in. thick.

c - clayey gravel 6 in. thick,  
d - reddish drift, blue & red below.

Photograph this in  
afternoon or  
morning.

The gray runs out below & yellow  
does this.

Kitchen 1672 - at 4:30 PM

Cut 30 (and) Fines S. Gray loess with tubes,  
and many nodules. Yellow loess  
follows hill.  
(and)

Cut 31 - Drift well up. Gray loess (thin);  
yellow loess.

Cut 32 (and) Yellow loess; gray streak.

Cut 33 (and) Drift; yellow loess.

Cut 34 (and) Drift up to 1610. Red  
clayey gravel very distinct; then  
gray streak; upper part yellow loess,  
on slope with many nodules. Top = 1645.

1645 ft. 3755

CR. 90 - 325

mid afternoon.

Sept. 6 1913 - Mon.

Shaver's ditch 1554

trip to Big game

Bethel - 1438 - C. New depot

1440 - C. S. W. -

Cut 180 faces E. Hill side  
treeless on both sides  
10' trees in cut 5-6 ft. all along.  
bottom sec. 2 & 11 seems to be

quite thick, - 10 to 12 feet in  
expanses, but treeless, -

and the way down  
Top of road = 1538  
faces W. Hill rises 20 more

Cut 181 tree part facing W. in ditch

Cut 182 shows green grass on slope facing N. Here covered  
in blonde, sandy soil on W.

Cut 183 side of road 3. Tree part facing N.,  
mainly blonde on all the hills & shows  
green grass in valley. Face S.  
green grass only.

Cut 184 E. of middle of pine between 4 & 9,

81-38 shows a brown soil & thin drift.

At school house E. Tree part

Cut 185 still the same  
faces west shows yellow grass.

Top of hill at 1570 has sand  
soil & smaller bushes west

The slope C. shows many yellow  
grass all way down. (= 185).

Cut 177

On slope facing E. along Long Branch,  
drift shows well up. Yellow grass along

Sept. 11 1913

Cut 178 faces N. It shows both gray &  
yellow grass.

Cut 179. Is in road on low ridge & shows  
practically only drift.

1438 - 1375

CR. 90 - 325

mid afternoon.

Cut 186.

On W face of same ridge  
drift appears & loess (-185a)

West ridge slope, face E.,  
a short distance below ridge  
well up a gully on N side  
out of yellow soil, at least  
before.

This is only written & yellow, a gray streak  
gray loess well down, well in  
middle, about 3 ft from N side  
ridge West ridge.

This cut was 7-8 ft.  
(On S side - 200 ft long)

Zones as follows through lower  
part of yellow soil many  
bedrock and mostly covered  
with loess, but may  
smaller areas appear near top  
of ridge. (No yellow loess & bedrock  
& drifts)

Zone sand appears in low gully near N. cor. 7-81-37.  
Sens 187 - Shows yellow loess

Cut 188 - Shows drift & much yellow loess.

Cut 189 - A drift ridge.

Cut 190 - Drift; ferricrete (clayey); gray loess; yellow  
loess well down. Loess higher to N  
ridges along E. side of cut. (2 & 3 show much loess (green))  
Cut 191 - Drift, high up, yellow loess.  
Cut 192 - Drift, high up, yellow loess.  
A small cut shows drift (green).

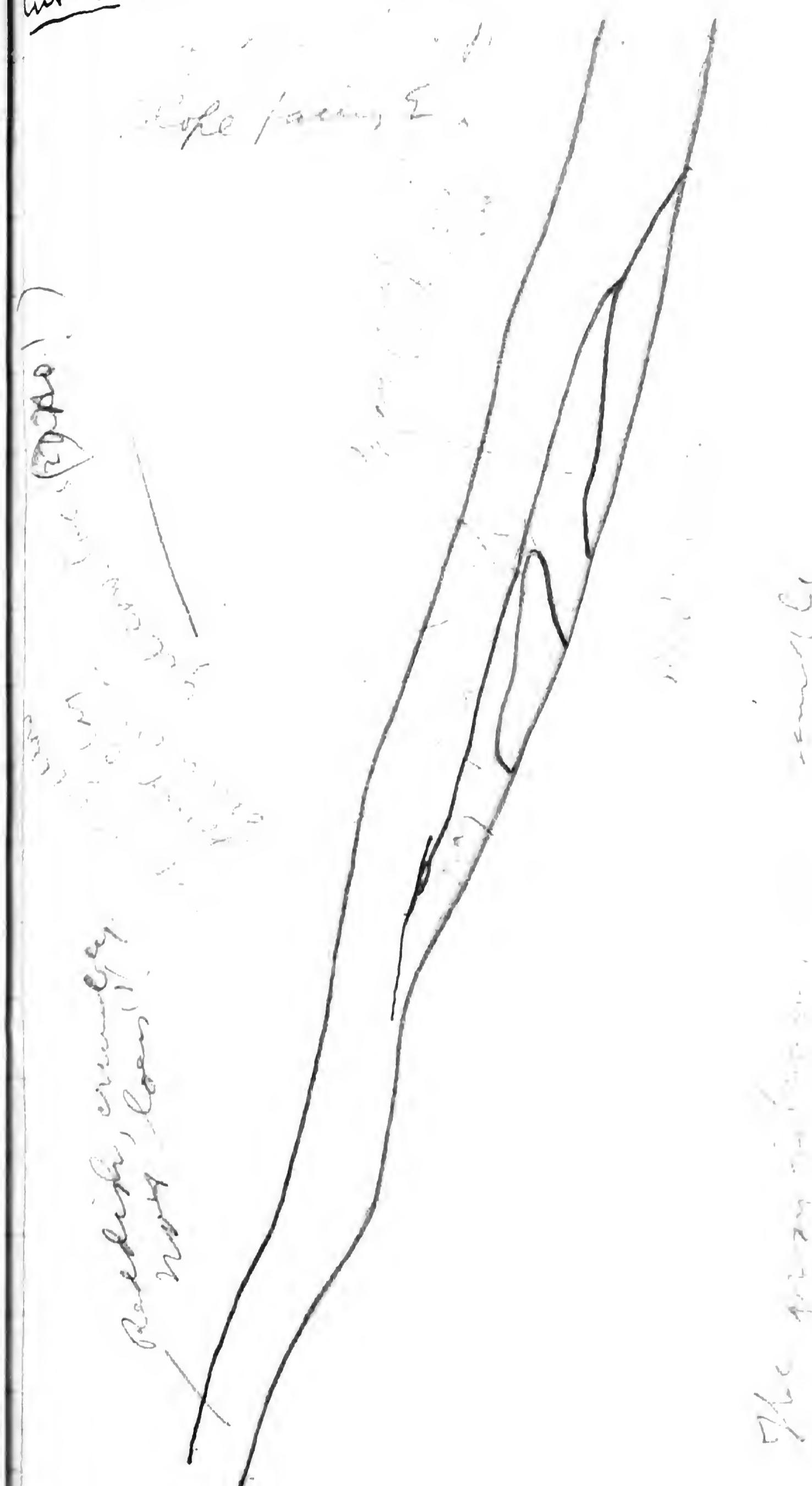
Cut 193 - N. face

23-6-6.

Height 137 ft

CR. 100 - 3.25

mid-attention.



Cut 193 (a) Face W. shows gray & reddish streaks.

Cut 194 - Drift. Red mud (?) faces E.  
Cut 195 - Faces W. Drift well up. On top material is  
redish & crumbly.

Cut 196  
W of RR on 22-81-38 - A  
steep hill runs N - faces E.  
Its lower half is drift, then a  
gentle slope, then a narrow,  
& above, yellow

This is on N. line No. as. 22-81-38.

The gentle slope is very distinct -  
pebbly. The gray streak is  
narrow & indistinct.

The material above is yellow  
loam & its surface has fossils  
& scattered nodules. (See sample  
<sup>in 2 pp.</sup>  
<sub>in distance</sub> of loam & fossils.)

Cut 204  
Near center of N. line of RR, ne  
21-81-38 a slope facing E.  
shows a good exposure of gray  
loam - here brown & crumbly, but  
with fossils scattered though, some  
nodules & tubers & streaks.

See loam & fossils.

Among scrub oaks on N. line NW.  
21-81-38, found a small many-  
<sup>Bifidaria</sup>  
<sub>lobigerum</sub>

Just w of this a road, 1 mi. long,  
W. with yellow cut above 5-7 ft  
& gray, with tubers, below

Notes 1375

CR. No. 325

red attention.

Sta. at Defiance = 1464  
Plane, 5 min west = 1500  
= 1510

Went to big cut (1 mi. east) I saw  
RR. Collected fossils in gray loam.

The fossils in gray were collected  
chiefly between 260 yds & 275  
yds from N. (E) end of cut



Cut 217

The 2<sup>nd</sup> cut is the same one.  
It measures about 400 yds. in  
length, & is made across a  
long ridge, so that both sides  
are about the same. The  
west side is a cleaner cut,  
however, and most of the work  
was done on that side.

at B:

Base = 1336.

Top of Kansan = 1351

Top of gray loess = 1365

Top of bank = 1379

Highest part = 1382

Where Kansan is highest 1381

at A - Top = 1359

Base = 1336  
23 ft

Top of gray loess, highest part  
\* 1354

Top of Kansan 1345.

at Base 1330

Cut 217

2<sup>nd</sup> cut, W. side

From base to top of Kansan

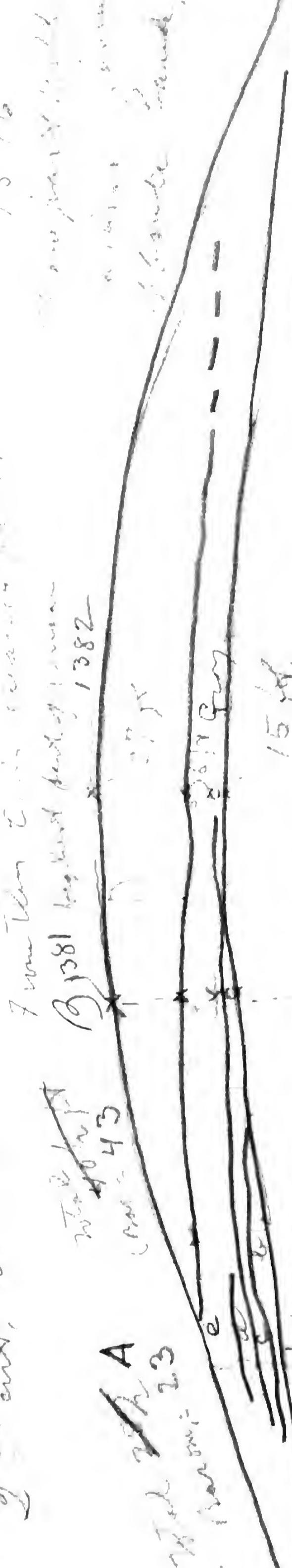


Photo 2-63

15 1/2

Top of Bank

Top of Gray

Top of Kansan

Top of Bank

The yellow layer has dark brown spots & streaks, & some gray patches.

Transition to gray at base  
is not so sharp though quite  
abrupt, but at S. end it  
is very sharp.

The yellow layer has fewer  
joints, & some brown &  
S. areas predominate. The  
former is very rare in gray  
layer.

Cut 1 is evidently same  
as upper, yellow, layer in  
cut 2.

Tooth positions 5, 6, 15 & 16  
with maxilla &  
33 + 34 showing and  
broken N.

all samples are from  
near Br.

at 218

The 3<sup>rd</sup> cut follows 2<sup>nd</sup>  
closely.

It is about twice 1<sup>st</sup>  
end & only yellow  
layer. Rather abundant  
here.

at 219

Very long, probably  
about as long as 1<sup>st</sup> cut.  
W. side is white, middle  
fairly yellow - ends almost  
gray, with large nodules  
& joints rather rough, -

at 219 abundant see in  
W. side 1/2 ft deep on E. side - 6 ft Many  
nodules, few joints.

at 220

Cut 5 is long, no curve,  
& much smoother.

Batch 1 3755

CR. 9.0, 325

mid afternoon.



100 yds thin & very  
thin clay shingle  
at S. end on ridge  
but shows each part  
as thin clay & thin  
shale layers  
This is in lower part  
of bed & has  
the usual features.

569 ft  
100 yds thin &  
thin clay shingle

at S. end on ridge  
but shows each part  
as thin clay & thin  
shale layers  
This is in lower part  
of bed & has  
the usual features.



The gray & yellow  
beds below the  
fossils & sandstone  
are probably  
breaks of an older  
beds & may have  
quite large  
pebbles & sand derived  
from them.  
The big part of each layer  
is the clay ferretto  
seen to be almost & bent (?)

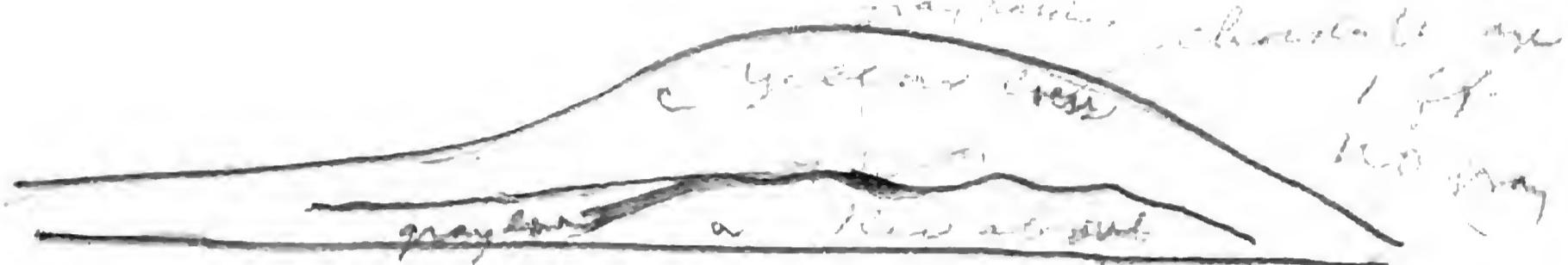
1450  
1430  
1403  
6 ft shale  
West side  
Gneiss  
thin shale  
thin shale  
6 ft shale (?)  
all good  
bottom

May 13 1941

CR 101, 325

22 L

cut 6 - is about 300 ft x  
long. At N end of N side yellow loess  
rests on chocolate layer. Same on E side.  
N side cut 6.



at 6' on E side front edge  
gray loess with tubes & rounded  
nodules is exposed about 6 ft  
& above it is 8-10 ft of yellow  
loess. Line sharp. At 12'  
Same no fossils in yellow part here.  
N side a - very much rounded  
reddish loess. 7 ft. thick  
base - 1403

Top of Red band (tubular) 1412

Top of gray loess

(Top of bank - 1439  
(The cut on S. side looks similar.)  
The gray loess runs out a very distinct  
The chocolate layer follows surface of drift.  
The gray appears in patches on N side, not thick.  
Yellow loess - 27 ft thick few round nodules,  
some (few) scattered, - chiefly below.  
About 3' overgrown marshy cut  
steeper in cut 33 towards  
Eastling, but they will be better

bedding when we come back  
and the same  
be true of cut 346

March 1

375.

CR, 9, 1, 325

mid afternoon.

On the top sand on the ground.  
Bridges - zigzag line  
below zigzag line  
Scirpus longus, <sup>at</sup> tall grass  
Helianthus grosseserratus  
On hummocks common grass  
Sagittaria latifolia  
Asclepias speciosa  
Viola nephrophylla

On return

1380 = base of cut 2

Nov. 1375 C.M.W. 1305

CR. A.P. 1325

mid autumn.

Sent today. Please in letter another  
well go to me at Dr. Pearce Hall  
to indicate best way to use at  
McClains. Not boxes of paper plates, like  
I bring out, a heavy basket home. Zee feels not  
express express  
to pay charges on it.

Want to buy plants in cotton need  
it earlier. Another, ~~tonight~~ will go to me at  
~~tonight~~ University tomorrow ~~will go to me at~~  
~~tonight~~ has now boxes of paper plates. Take them  
out. Send a heavy basket home. Zee  
forces not to pay express charges on it.

|                                                       |  |
|-------------------------------------------------------|--|
| <i>On</i> <i>diatoms</i> <i>greenish</i>              |  |
| <i>Diatomum multum</i> " greenish                     |  |
| <i>Diatomum gracile</i> <i>darkish reddish</i>        |  |
| <i>Impatiens waller</i> " green                       |  |
| <i>Rosa</i> " <i>leaves round</i>                     |  |
| <i>Urtica dioica</i> " <i>leaves round</i>            |  |
| <i>Ligustrum sp. n.</i> " <i>leaves round</i>         |  |
| <i>Impatiens parviflora</i> " <i>leaves redish</i>    |  |
| <i>Scrophularia nodosa</i> " <i>leaves round</i>      |  |
| <i>Dipsacus fullonum</i> <i>Eriogonum canescens</i>   |  |
| <i>Kuhnia eupatorioides</i> <i>Kactua canadensis</i>  |  |
| <i>Aster laevis</i> <i>Aponium canescens</i>          |  |
| <i>Alyssum canadense</i> <i>Facelia glauca</i>        |  |
| <i>Abutilon indopense</i> <i>Anthonia strumifolia</i> |  |
| <i>Hordium jecatum</i> " <i>bifida</i>                |  |
| <i>Adonis vernalis</i> <i>Asplenium platyneuron</i>   |  |
| <i>Hedera helix</i> <i>Polygonum aviculare</i>        |  |

CR. I. P. - 1325

with attention.

1st Oct 1375 C. M. W. 1355

Sent basket today. Beanie in place. Another will go to me at 10. I believe I shall probably bring my specimens up to you to take away and a heavy load. Zelle feels most nervous about his messenger on it.

Spent morning to take pictures in Colton need cabin address to me, will go to see him this afternoon. Spent a heavy afternoon this evening. Zelle got some specimens of ~~the~~ plants, take them out. Spent a heavy basket home. Zelle got back to have specimens cleaned up it.

Department of Botany

The State University of Iowa  
Iowa City, Iowa

Roadsides  
R.R.  
Gardens.

Cornfields  
Grainfields

Pastures  
Lawns.

Office of late 1296  
CR & P. 1235

On return 1283

On diurnal - 3000 ft. 1st

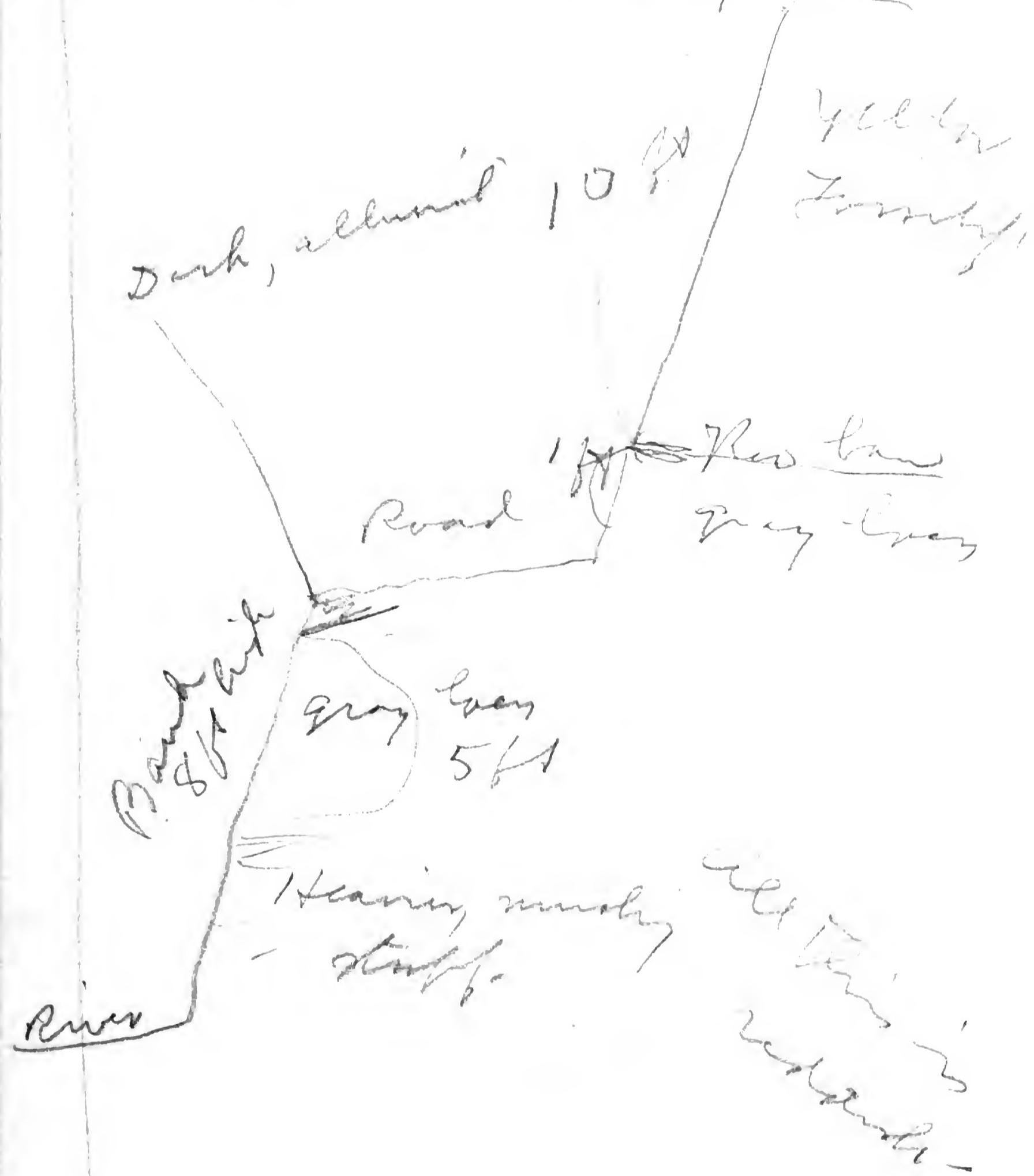
|                                                            |                        |
|------------------------------------------------------------|------------------------|
| <i>Bergenia cordifolia</i>                                 | in non calcareous      |
| <i>Endlicheria laevigata</i>                               | Trichium edule         |
| <i>Inula corollata</i>                                     | " nyctea               |
| Rosa                                                       | Malus canadensis       |
| <i>Silene vulgaris</i>                                     | Stellaria nemorum      |
| <i>Equisetum sylvaticum</i>                                | Scandix pecten-veneris |
| <i>Inula procera</i>                                       | Lamium galeobdolon     |
| <i>Osmunda cinnamomea</i>                                  | Linum canadense        |
| <i>Dipsacus fullonum</i>                                   | Eriogonum canescens    |
| <i>Kuhnia eupatorioides</i> var. <i>Kactaea canadensis</i> |                        |
| <i>Aster laevis</i>                                        | Apoynum canadense      |
| <i>Alyssum canadense</i>                                   | Viola pedata           |
| <i>Anemone multifida</i>                                   | Antennaria villosa     |
| <i>Hedera helix</i>                                        | " trifolia             |
| <i>Adonis amurensis</i>                                    | aster exiguus          |
| <i>Helianthus tuberosus</i>                                | Polygonum aviculare    |

Sep. 3, Wed., 1913

Sep. 4, 1913 Thurs  
Drove to Redfield's grove  
along road noticed weeds:  
*Abitilium* *Polygonum avicinans*  
*Setaria viridis* *Zizaniopsis miliacea*  
" " *Lathyrus sativus*  
*Artemisia trifida* *Panicum capillare*  
" *artemisioides*  
*Molinia caerulea* *Polygonum persicarioides*  
*Eriogonum canescens* *Convolvulus sepium*  
*Amaranthus retroflexus* *Arthraxon hispidus*  
*Echinocloa crusgalli* *Cassia chamaedrys*  
*Amaranthus blitoides* *Asclepias syriaca*  
*Lactuca sativa* *Ridens pumila*  
*Polygonum* (<sup>in the</sup> *lancea*)

Bethelton barn pasture  
*Helianthus grosseserratus*  
*Vitis rotundifolia*  
*Polygonum* (various see above)  
*Rumex crispus*  
(*Acetosella* *rumicifolia*)  
*Ridens Claytonioides*  
*Artemisia vulgaris*  
" " *wide*  
*D. coccinea* (*wide*)  
*Boltonia glauca*  
*Modestum* (*wide*)

Went to cut 3, Martin  
cut. Turkey S.



Cut 3

15 x 16 New white  
25 x 24x Farter  
10 ft. tall  
10 ft. diam.  
13-5 in  
14 ft.

15 x 16 New white  
25 x 24x Farter

Took lvs, & acorns & ale. from  
Bur oak on bottom land  
in Redfield's grove.  
Tree 14 in diam.

In brush scrub pitch 15  
in west of Red Buttes.

Bur oak & Hazel dominants.  
Red elm, few & rather small  
in size, few -  
large gray cedars  
*Vitis riparia* are present  
much blue grass, - other  
small plants few, ~~all~~  
grasses. Pasture

Fern *Botrychium* most  
common, chiefly on lower slopes,  
also two Zon. elms,  
above I saw a few  
*Urtica*, a *Kelloggia* &  
*Piparia volzingeri*.

Two lichens which  
appear to be common on  
all the scrub & all habitats

In afternoon drove 2½ miles

Cut 222

RR 463 ft

Road 1445

Cut 222

91c - 30 yds. long 10' wide  
grayish brown

Cut 223

167 ft. 15' wide, 10' deep

167 ft. 10' foot or 5' side on S.E.

This is 10' wide on N.E.

Black soil, brown top

boulders & rock debris. Black soil

Dark sample 7 ft. from top

a dark soil 1-2' thick, ~~moderately~~  
dark reddish brown between 4 & 5 ft.

Cut 224

21 a Cut 153 yds. long - about 10 ft

deep. Formerly gray - S side

now 91a

Cut 5 ft. - 10' - 12'

Top soil gray with brown spots,

a few rock boulders & few fossils.

Shows sharp oxidized surface -

1-2 in wide & this is about 3 ft

above RR.

work samples of yellow & gray soil

few boulders & nodules in yellow  
soil band again

Toward N. on the gray  
rises a little & the rusty  
band is faint. But yellow  
above this dark brown streak  
& gray below including a few  
nodules.

Cut 91 - Top 1452

RP 1435

177

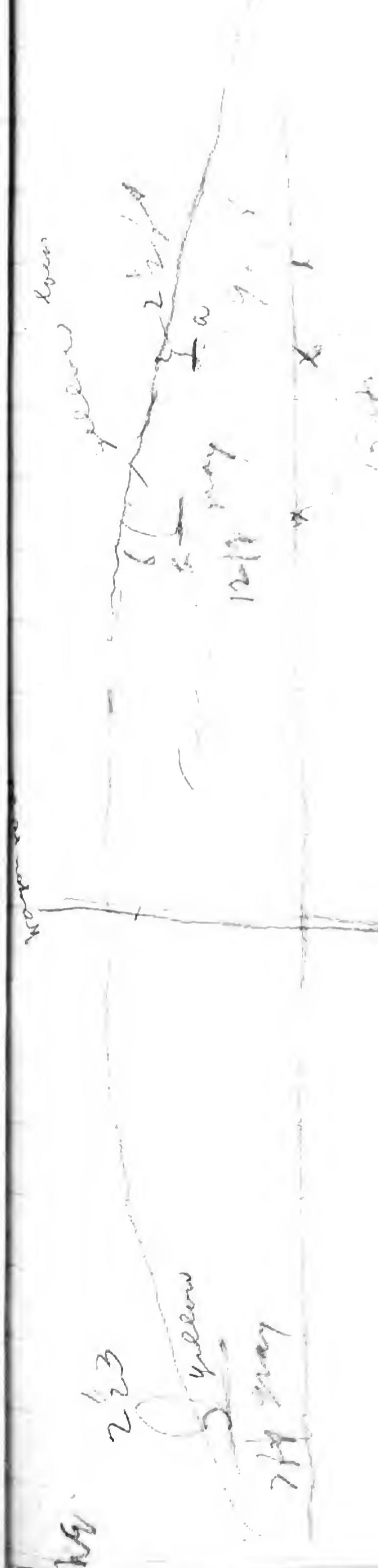
3 pole lengths = 150; 3 ft of  
rust, & 3 poles W. of rust.

The S.E. mole of cut on bottom  
in all three sections.

At S.E. end shows gray band  
up to 8 or 9 ft, then a  
distinct rusty band 3-4 in. &  
then gray band with few  
tubes, few nodules & few  
fossils - 6 ft section. Rest  
covered by talus.

The yellow band is probably  
nowhere over 8 ft deep but  
dumping & overgrowing makes it  
hard to see.

Sgt



low

The yellow part is  
covered with talus &  
the top layer is  
less granular

Underneath there is a layer of white sand - 10 ft thick

At some point it -

etc

Cut 90 is a sort of double cut, S. just 5-yds long  
6 ft deep.

Gray base as above (about  
3' off) overlain by about  
2' yellowish green streaks, rounded  
& broken at base in the east  
part. Thickness of a man's m. I think  
Width  
5' 2" yds.  
 $150 \text{ yds}^2 +$   
Lm. part makes of 200 yds  
water

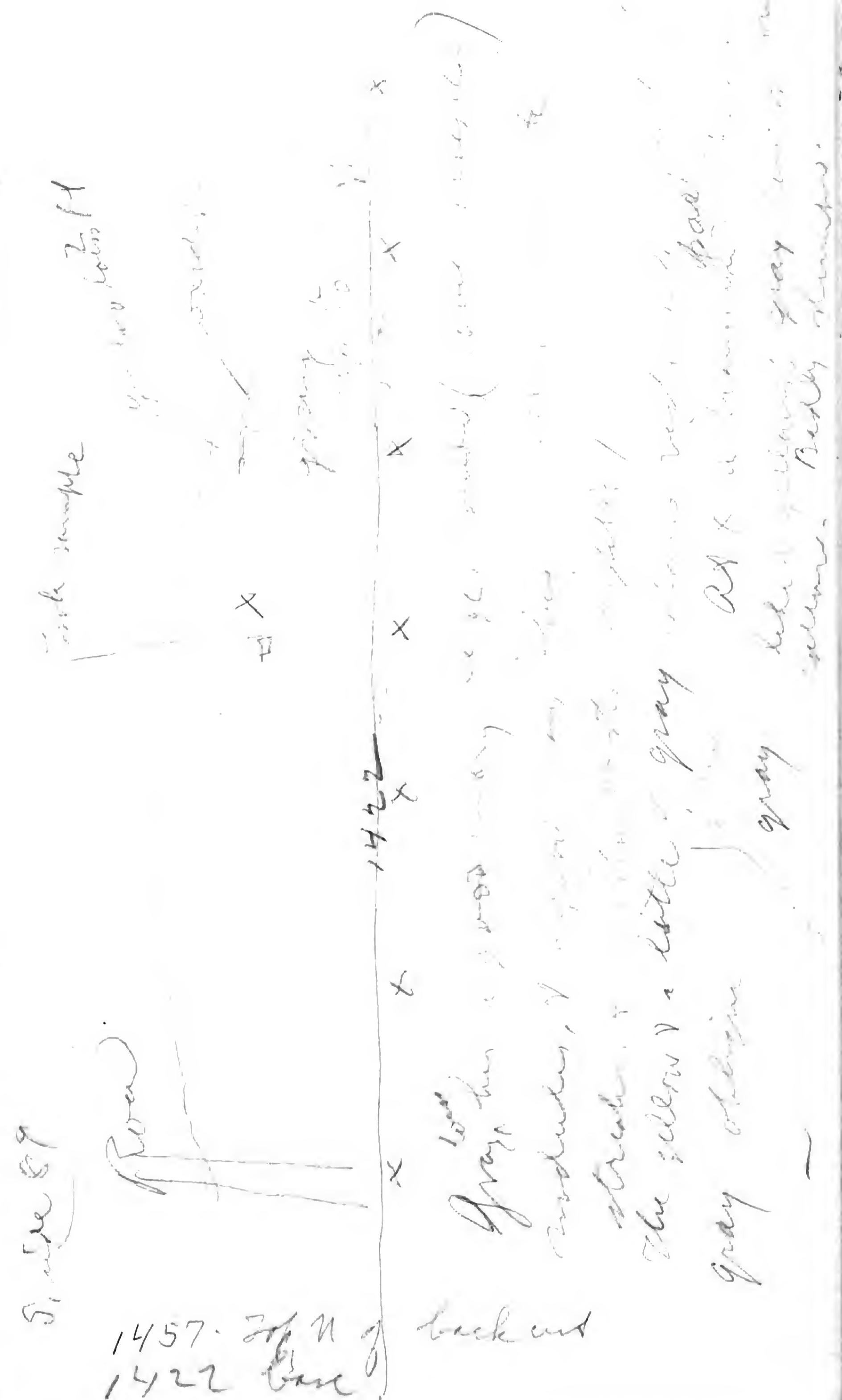
At back gray -

yellow in main part, probably  
not over 7 ft. Then down  
up to 10 or 12 ft, but base  
covered with talus, too far away  
from gray of both parts.

Nodules fewer in main part

Cut 89 extends 6 pole lengths  
(= 360 yds) W. of road, V 3  
holes E. (= 150 yds)

It is rough, cut out in rock  
& partly slumped.



and old  
cut  
back - overhead  
bed - yellow  
bed -  
Only 5 ft.  
yellow  
bed -  
redgray  
all my  
interc. in  
S side  
is probably gray.

The E. end of S. side looks as if  
gray lower part <sup>within</sup> 3-5 ft  
of top. It stands nearly  
vertically (the ~~yellow~~ part of  
gray) gray

RR

50 yds. above cut 58.

Cut 58 is mostly sand  
+ some gravel. About 18 yds  
long & 14 ft deep  
On N. side 6 ft. of sand  
with white pebbles &  
yellow gray fine talus  
On S. side may run up  
to 10 ft. below 4-5 ft  
below talus  
in other places. Perhaps  
at cut 8.

Cut 82 is just E. of 45 line  
between cut 53 (about 350  
yds between ends).

Cut about 50 ft. E. of 77  
18 yds. deep.  
At W. end only 3-5 ft yellow  
bed - fine gravel  
Gray runs up to 8 ft at

at 2<sup>m</sup> below base white fine  
grained grayish-green  
limestone.

Cut 225  
at 3<sup>1</sup>/<sub>2</sub> to 6 poles a  
cut 10 ft. on N side.  
Probably was gray.  
Goes down - thin bed present  
made.

11 poles from this cut to  
cut 81. ~~30-40 ft.~~ <sup>30-40 ft.</sup> ft. dep.

Gray brown weathering up.  
Many nodules. Some broken  
stone no streaks - too dark.  
A heavy black sandy  
loamy stuff or brick  
soil - not loam.

It is 450 yds long.  
This is a fine large cut,  
and should be studied <sup>more fully</sup>. It  
was too dark for this

Along road to cut 83.  
at cut 85 I found  
gray Limestone with thin  
calcareous bands of white  
fossils, mostly trilobites.

Sep. 5, 1913 - Fri.  
Went out to look for  
weeds.

Reading at hotel = 1300

Weeds along streets of Harlan:

|                         |                                                     |
|-------------------------|-----------------------------------------------------|
| Zizaniopsis miliacea    | Eriogonum canescens                                 |
| Polygonum aviculare     | Polygonum perfoliatum                               |
| Panicum capillare       | Rubus chamaemorus                                   |
| Aeluropus glaucus       | wh. com.                                            |
| Amaranthus palmeri      | Plantago major                                      |
| " " micrantha           | Millettia altissima                                 |
| Chenopodium album       | Datura stramonium                                   |
| Ambrosia artemisiifolia | Lepidium lasiocarpum                                |
| Ochnosia cornigera      | Burdock                                             |
| Lactuca serriola        | Hardenbergia                                        |
| " " var.                | Asteria umbellata                                   |
| Rumex acetosa           | Malva rotundifolia                                  |
| " crispus               | Bidens frondosa                                     |
| Distichlis spicata      | Eryngium yuccifolium                                |
| Amaranthus trifidus     | Acalypha syriaca                                    |
| Convolvulus sepium      | (var. inermis) Ipomoea hederacea<br>(my fine green) |
| Portulaca oleracea      | Eclipta prostrata                                   |
| Polygonum convolvulus   |                                                     |

in fence or lot near  
the stream. In fields & hilltops  
the following were seen.

|                            |                           |
|----------------------------|---------------------------|
| Along R.R. from:           | Brassica nigra            |
| Ambrosia trifida           | " annual                  |
| "                          | Amaranthus (long slender) |
| "                          | Ipomoea purpurea          |
| "                          | Ipomoea carnea            |
| "                          | Croton albus              |
| "                          | Croton leprosus           |
| "                          | Abutilon theophrasti      |
| "                          | Passiflora edulis         |
| "                          | Hordeum jubatum           |
| Tetragonia microcarpa      | "                         |
| Digitaria sanguinalis      | (my fine grass)           |
| Eclipta prostrata          | Ipomoea pallida           |
| Eclipta prostrata          | Eclipta prostrata         |
| Eryngium canescens         |                           |
| Polygonum perfoliatum      |                           |
| Polygonum convolvulus      |                           |
| Panicum capillare          |                           |
| Chenopodium (var. inermis) |                           |
| Polygonum (some name)      |                           |
| Acalypha hederacea         |                           |
| Polygonum aviculare        |                           |
| Rumex - (various)          |                           |

CR I + P. deposit = 1244

C. G. W. = 1253

(lime) 1284

total in column 1284

Not satisfactory for short lines,

Catalpa

Box elder.

green ash (and many)

soft maple

Ash (dark thin)

Hard maple (green thick ash)

Scotch Pine

Ash Pin

Larch

Cedar

Arbutus

Norway spruce

Mr. Wm. Johnson - suggested

Mr. Parry's buckshot.

yellow - runs out N,

first & ~~second~~

~~as sandstone~~

gray clay.

Top clay all told 30 ft.

Some hard brown  
stiff (charcoal layer)

under coals.

Blue joint clay  
(in places red)

Then sand, with water

Sept. 6, 1913 - 1271

The following species have been  
seen along the Atlantic coast of North America  
and in Europe.  
" native English  
Orchis triphylla  
" " " "  
Asterias rubens  
Eryngium canadense  
Lychnis viscaria  
Ranunculus aquatilis  
Scorpiurus erosa

*Kuhnia eupathoides* var.  
*Agropyron tenerum*  
~~*Bromus*~~  
*Sisymbrium Caeruleum*  
~~*Lactuca pulchella*~~  
*Heuchera* <sup>and many</sup> *lanceolata*  
*Douglasia*  
*Adonis amurensis*  
~~*Thlaspi* *canescens*~~  
*Ceratodon* —  
*Soldago speciosa* var.  
*Trix*  
*Chrysanthemum*

Cissimizans

Anemone coronaria  
Gentianella amarella  
Hediondilla nemorosa  
Lupula capitata  
Adonis amurensis  
Corydalis cava  
Erythronium sibiricum  
Rosa rugosa  
Oxalis acetosella  
Urtica dioica  
Lacistema cordatum  
Veronica sublobata

~~Wetland vegetation (Aug)~~  
Tuscarora (various species) (Aug.)

River Oiseau.

~~Longleaf Pine forest,~~

~~Aster laetus~~

~~Baptisia leucantha~~

~~Equisetum glaber~~

~~Astragalus Gendron~~

~~Oxalis white~~

~~Monarda mollis~~

~~Asclepias syriaca~~

~~Anemone cylindrica~~

~~Thelypodium integrifolium~~

~~Cotula palustris~~

~~Corynepetalum~~

~~Monocotyledon aristata~~

~~Acetosella (very narrow lvs)~~

*Cassia* - *lanceolata*  
*lanceolata* - *lanceolata*  
Sally - 1

1. *Thlaspi* *canescens*  
*Thlaspi* *canescens*

لهم إنا نسألك

Mr. Green for Ireland.

~~Water~~ 12 minutes

*Crocuta* *plainsi*

Options on the English War.

*W. C. L. - 1900*

*Acacia*

*Argyrodes* *coquilletti*  
*Stål* 1871

*Vesperina* *luteola*

*Pipilo chlorurus*

Russek's Cocaine

*Phragmites communis*  
*Salix longistylis*

Locality

Polygynia sandwicensis  
Podocarpus sp.  
Pithecellobium  
Acacia sp. & others  
~~1. Montaña~~ <sup>W. S.</sup>  
Araucaria sp.  
Cupressus sp.  
Casuarina (red)  
Eucalyptus sp.

Podocarpus sp.  
Podocarpus sandwicensis  
Podocarpus sp.  
Podocarpus sp.  
Podocarpus sp.

Sep 7, 1913 Sunday

1267 = CR D & P. deposit at Andubon

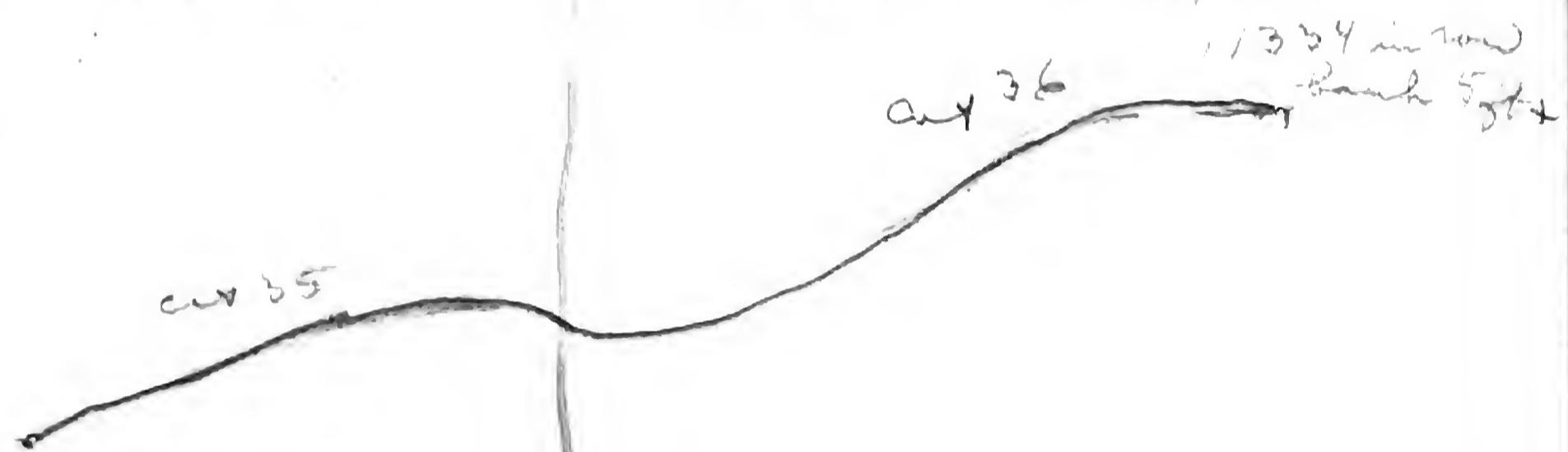
At cut 35, just N of R.R. st of Andubon, there is a rather big hill facing S. It shows drift & clearly on lower slope, a small boulders.

At top there is a cut about 9 ft deep. It shows gray loess with tubes (not in no fossils or nodules up to within about 3 ft of top, & then the loam, boulders remain) layer atop is of the gray loam, there may be only about 2 ft & below there is drift, oxidized above, with saw streaks.

The drift is a good joint clay, much of it yellow, with blue (light) streaks, beds & interbeds, & it has large pebbles & small boulders. Very calcareous.

Cut 36 - Top of hill = 1334

This is on the west side, near bottom  
S., of which is a low hill, in continuation  
with an intervening low



In cut 36 - which runs up S. end  
8 ft., drift is exposed quite to  
top of hill, & has a covering of 2 or 3  
ft. of heavy, yellow, coarse-textured  
stuff (no sandstone). Took it from near  
top of hill, near 1/2' below top of bank.  
Cut 37 faces E. & shows red ferruginous  
up & a cap of yellow sand  
not thick.

Cut 38 shows yellow loam all the way up  
Top of hill = 1360

Cut 39 is on a low ridge, runs over  
top, & on S. sides where drift well  
up & a cap of the yellow stuff  
cut only 3 or 4 ft. deep.

Cut 40 is just a low ridge with  
drift exposed on road to top.

Cut 41 faces N. & is just a part of  
hill, it shows much gray iron road,  
& yellow drift towards base.

Cut 42 is on a steep hill facing  
S. (Top = 400) It shows  
drift with small fossiliferous.

of brown (or tan) (?) well up  
hill, about 1/2 ft. & then a lot  
brown & the top yellow.

Cut 43 faces N. Shows drift well  
up, then gray streak & little cap  
of yellow.

Cut 44 faces S. A gentle slope  
Shows drift well up. Then about  
1/2 ft. of gray, with iron tubules,  
is exposed in gutter on W. side.  
Then yellow - a little.

Cut 45 On a low gentle slope  
facing N. Gutter & bank on E.  
side show reddish drift with

a large granite boulder  
The gray rock & a little sand  
appear at various points along  
the road. I found today,  
I note only in the striking slopes.

Cut 46 is on slope facing S.  
Fairly uniform. Shows  
drift at first, & of thick  
& yellow sand top. Top of hill = 1388  
In S. part Cannon top - about  
Sargentson mica, a fine green  
& tan mica, 1/2 in. & larger  
Cut 47 is on slope facing E. It shows  
1-3 ft. of yellow sandy stuff

Cut 48 is a long slope facing S.  
It shows no fossils & probably  
drift for some distance up the  
slope & then it vanishes with  
a thin layer of yellow.

Encountered several places where the top  
of hill had been cut, & in one place  
they even broken up more hill

54

fixing tree covered the sides  
of cut

Cut 49 By way up hill - back way to  
Cannon top. It consists of two cuts  
at 45°, 18' then down 45°  
1298 - RPP = 8 ft. 11"

From 1298 to 1350 by way to Cut 29  
Near S. end of cut, in valley about  
2-3 ft. far away may find clay  
with pebbles, probably under  
4-5 ft. of sand & probably  
clay & with small boulders  
(See sample of each.)

At about 1350 a few places  
begin to appear. (Find on p. 16.  
8 sec. of notebook)

weekend 3-5 ft. Foundation part of gray loam

200 ft

in zone, coarse sand  
fine sand, coarse sand, sandy

gray loam, gray clay

At about 1363 ft. cool, pinkish  
gray loam with carbonaceous  
material nodules white, gray,  
& some green from about 50 ft.  
The ground & large boulders - com-  
plete change in color brown light tan to gray  
the white bands have small rounded  
the talus yellow & gray & no sand

Still getting iron  
this streak of iron is  
constant in the soil  
large boulders are  
soil fine sand & loam

gray loam

Higher up - 1373 ft.  
gray loam - as above  
the surface brown &  
brownish tan in the soil  
white sand boulders in gray  
(no talus here)  
small nodules of iron - yellow  
not so prominent.

The very top - 1373 cut only 1 ft  
then south slope about 235  
yds. along this are 1-2 ft. and  
a few boulders are there in  
the sand & yellowish tan soil  
for some

at this 235 pt. a little  
gray over brown, with  
boulders. Reaching at 235 - 1375  
there for 91 pds. cut a thin 3 to  
4 ft. but only 1-2 ft. in  
the yellow & this shows no drift  
all the way, the talus does

Thickness less than 4 ft

Reading at this point = 1308

At 15 more yds gray  
begin. It runs up hill as  
a gray band less than 1 ft thick  
& 2 $\frac{1}{2}$  - 3 ft of yellow sand is.

Cloudlike layer often somewhat  
at end of 15 yds reading = 1365

For about 17 yds gray begins  
from above - Reading = 1360

About 100 yds more to N. side  
of road. Reading = 1340

This is not yet lowest pt. low.

Lowest bottom & = 1318

Drift stone along E. road

1305 = RR at Gray at 1 $\frac{3}{4}$  yrs

1300

X

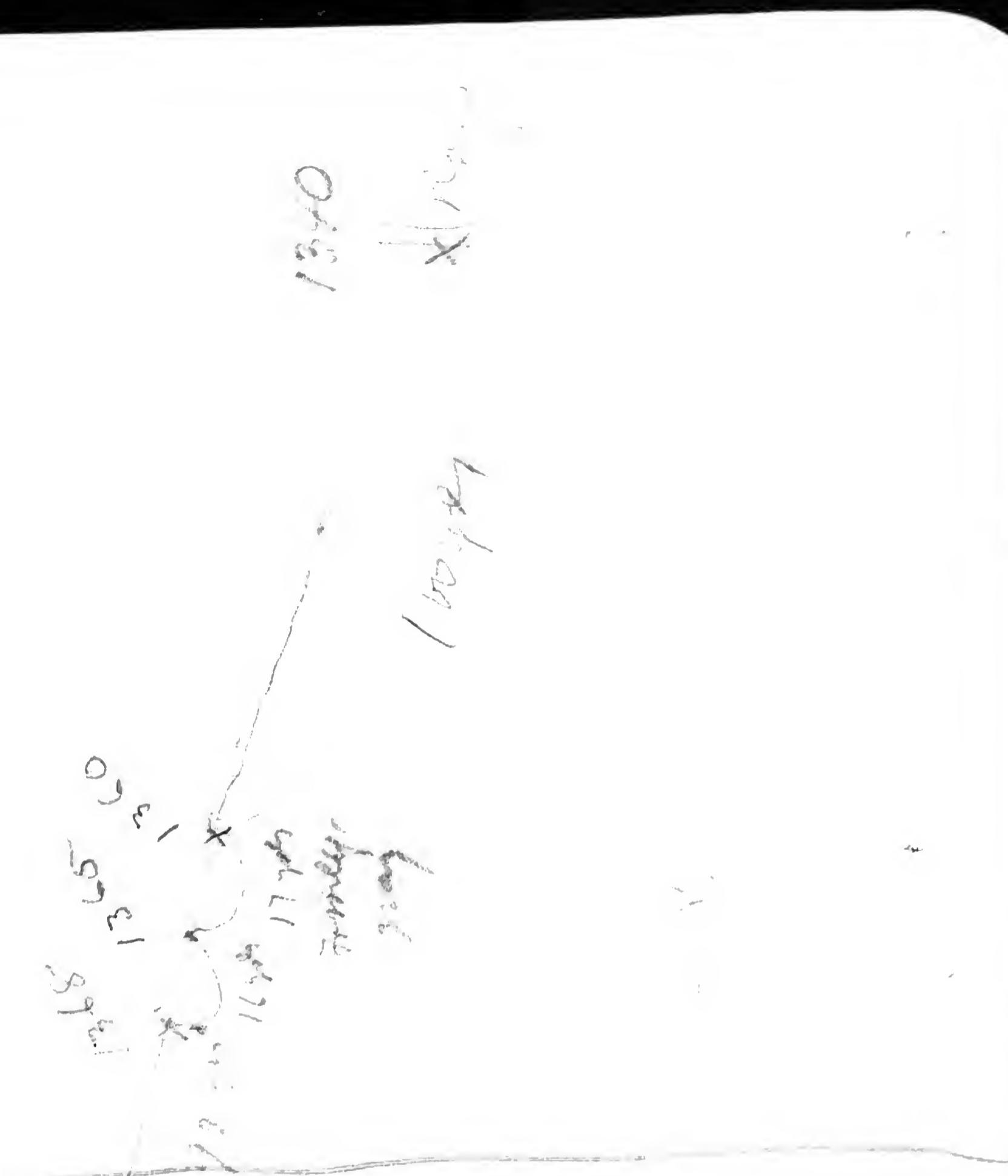
1305

E. side

Cloud  
bottom

50

2350



Cut 50 faces W & is along edge of  
high hill. It shows yellow layer  
all the way up. I don't see  
not a deep cut.

Cut 51 faces E. Shows yellow  
by way up, then gray streak &  
finely yellow.

Cut 52 faces E. It shows 5-6 ft of  
yellow layer in cut at top & sides (gully)  
near base show gray streaks

Cut 53 faces W. It is in rather low  
ridge & its lower part shows  
drift. Then a gully, & then  
in bank on N side a belt of  
gray layers (with streaks) showing  
at least 2 ft. Then yellow on top.

Cut 54 faces <sup>E</sup> S. Shows gray streak & yellow layer.

Cut 55 faces E. Drift at base.  
Layer above (yellow)

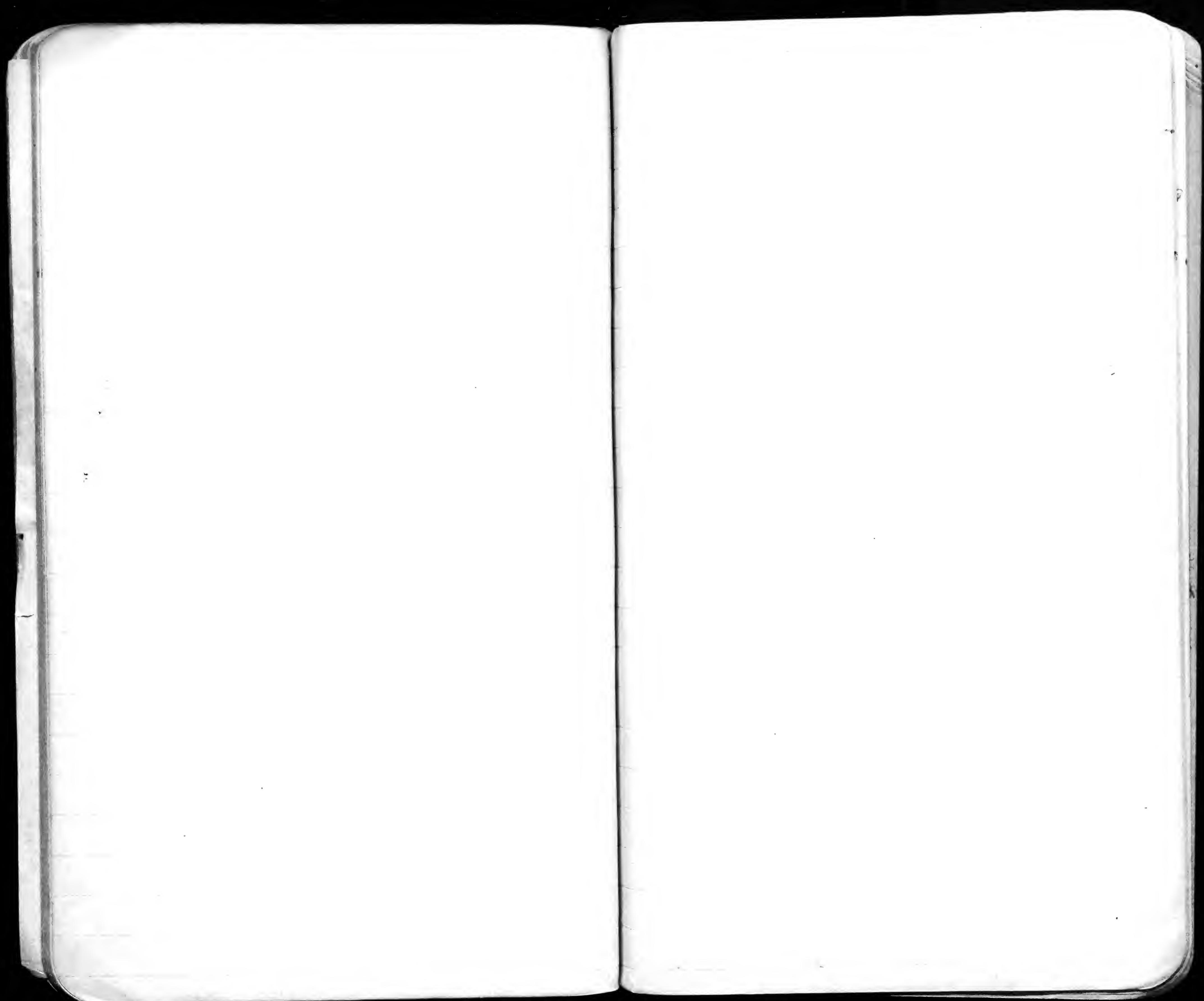
Cut 56 shows drift well up to  
intersection. Gray streak at intersection  
a little yellow layer on top & south  
few feet above also shows.

about 3 ft of yellow layer exposed  
in bank S. of road.

Gray is distinct but not thick.  
Has iron tufts & few nodules.

Cut 57 shows small drift &  
some slopes on top. Faces S.

Reading on return in hotel office 1296  
as CRV.R. = 1235  
on return, office 1683



Biographical History of  
Shelby & Audubon Counties, 1889.

p.230- Geology, John Miller & Nat. History  
(of Shelby Co.) pp. 230-231.

Galland's Grove contains "about 1000 acres."

p.230- "It is a prairie country, but does not have the usual characteristics of prairie land, as occasional groves and beautiful streamlets relieve the ordinary monotony of a stretch of prairie."

p.231- "These natural groves, planted by Mother Nature, are made up for the most part, of the different species of oak, elm, ash, hickory, black walnut and basswood. There are also many thickets of sumach, hazel, thorn-apple, blackberry, gooseberry and bindweed shrubs.

The entire county is supposed by geological experts, to be underlaid with a coal deposit, to a greater or lesser extent, but is covered by the post-tertiary deposits, not less

than 200 feet from the surface.  
The only stone is a building  
bricks as the under of the drift  
formation. Future prospecting and  
digging into the geological strata  
are quite likely to present a  
mineral wealth of great financial value.

One of the finest features of the natural  
resources of Shelby County is the excellent  
quality, as well as quantity, of land,  
whence water found in its  
numerous water courses and at  
easy depth for wells."

First whites (Galland's Grove) 1848. Name  
"Recognized Church of Jesus Christ of latter  
Day Saints." Council Bluffs was Lanesville  
some miles - fire at Galland's Grove, now  
in 1857 in Brown's Grove.

p.230- "Bluff deposit"

## Audubon Co.

Geology, Topography and General Features

pp. 638.

p. 638 - "The Post-tertiary formations everywhere occupy the surface. - The drift deposits are but imperfectly known, appearing only here and there at frequent intervals beneath the more recent bluff formations.

p. 643 - County organized in 1855 and named after John James Audubon.

p. 669 - Rock Island to Audubon in 1878

## Trips of the author

Aug. 23 - From Harlan, I. & W. 1 day

" 24 - South 1 day

- Out from Shelly 1 day.

- Out from Goldsboro 1 day, Shelly (or 2 days) 1 day, Linton

- Out from Defiance

To Dunlap 1 day

Return 1 day

Returning to Defiance 1 day

- Out from Botina

~~Shelly~~ To Kirkman & N. - 1 day

~~Andels~~ To E. of Kirkman & E. - 1 day

To Fisca - 1 day

S. E. - 1 day,

- One day at Harlan 1 day

Bridgeland

Bluffs E. side.

- out from Audubon

SW. 1 day.

SE. 1 "

NE. 1 "

out from Seward

Geo.

St.

1 day

Tuesday.

Plates 546 - Shows two sets living  
S. of W., in N. City Aug 11-79-39  
Aug. 25, 1913

Plates V, 10 & 15, X. Shows some  
of honey bees on 4th fl. - 18  
of windows on each side, facing  
S. - On A. line Sat Aug 22 1913  
rec. 14-79-38, Aug. 24, 1913  
Plates 23 & 24 X. Lincoln Park,  
W. A. Eschers place in middle of  
rec. 19-79-39,

Ken White  
3800 46<sup>th</sup> St.

Penton  
~~John Sandham~~  
8r 3A. 300  
John Ab. 26, 1871<sup>st</sup>  
May 5 - 1847 ~~young~~  
Oct. 21 - 1858 ~~Wife~~  
Oct. 24 - ~~Vesta~~  
Aug 4 - 1864 Anna  
" 6 - 1874 - Jim  
" 7 - Oregon  
Sep. 26 - 1880 - Ella  
May 14 - - Jim Sr.  
Dec 27, 1912 - Mary (Ella)  
Ella - July 8, 1887  
Bertha - May 5 - 1889  
Anna - Mar. 22 - 1893  
Vesta - Oct. 24 - 1896  
Frank - June 17 - 1900

J. P. Miller Artisan Well  
Chicago  
and . Ill.

~~2393 ft. 9 in~~

~~2795~~  
~~284~~ ~~ft. 9 in~~  
Find a coarse  
dull rock (or sand)

